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THE BOYS BOOK OF SPORTS



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FROM THE BOOKS
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Sarah Orne Jewett
AT SOUTH BERWICK, MAINE

BEQUEATHED BY
Theodore Jewett Eastman

A.B. 1901 - M.D. 1905

1931



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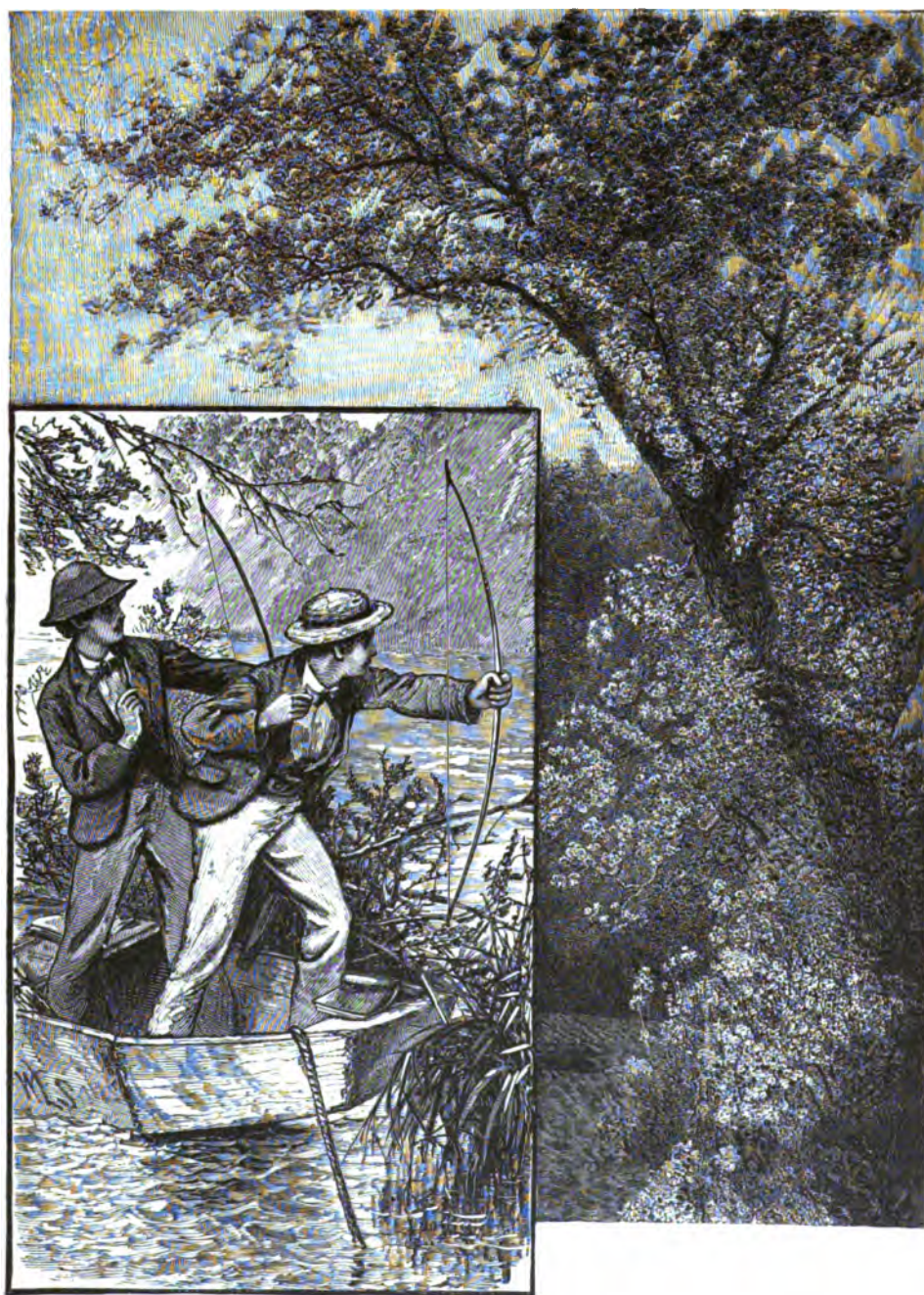
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"THE SPRING IS IN THE AIR, AND IN THE BLOOD."—OLD SONG.

THE
BOYS' BOOK OF SPORTS
AND OUTDOOR LIFE

EDITED BY
MAURICE THOMPSON



NEW-YORK: THE CENTURY CO.
1886

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THE DE VINNE PRESS.

PREFACE.

IT has been the aim of the editor and the publishers of this book to give to the boys and the youth of America a volume full of healthful amusement as well as of useful instruction.

The story of "Marvin and His Boy Hunters," which opens the volume, has been prepared with the purpose of teaching boys of proper age how to carefully and successfully use the shot-gun. Old and intelligent sportsmen will, of course, see little that is new in the manual; but the beginner with the gun will find all the rules safe and valuable, and he can not too closely read and heed them;—on the one hand, they will insure safety from accident, and, on the other, they will smooth the way to such success as intelligent and enlightened practice gives in any art. Boys long to have guns, and this is not unwise, provided they be taught the danger that attends the use of such weapons, and how to avoid it. The natural, healthful impulses and desires of boyhood and youth should be prudently respected. What a joy hovers in the sunshine, the open air, and over the fields and streams and woods, for our lusty, bright-eyed, tan-faced, nimble boys! Let them go at seasonable times and for reasonable periods, to get the very best that Nature offers.

All boys can not become successful naturalists, or explorers, or writers, or artists, or specialists in other lines, but all can reasonably enjoy and improve life; all can round out and mature character in the best lines. Believing in the maxim "A good boy makes a good man," the editor has tried to put into this book the helpfulness of a cheerful spirit and the freshness and purity of an outdoor atmosphere, so that those who read may feel the influence of wind, and sun, and water, of woods and of birds.

It is believed that there is not anything in the "Boys' Book of Sports" tending in the slightest to favor a spirit of idleness or of vain romance. Harmless fun is

indulged and vigorous exercise in the open air approved. The articles on outdoor life have been written by experts and illustrated by artists thoroughly familiar with the subjects in hand.

A wealth of materials placed in the hands of the editor by the publishers has been culled with all the care at command. Many of the papers have appeared in "St. Nicholas," but some of them have never before been published.

The book is offered to the boys of America in perfect confidence that, no matter how old the boys, they will find much in it to cheer, amuse, and instruct them, and nothing to work them harm.

MAURICE THOMPSON.

Crawfordsville, Ind., July, 1886.



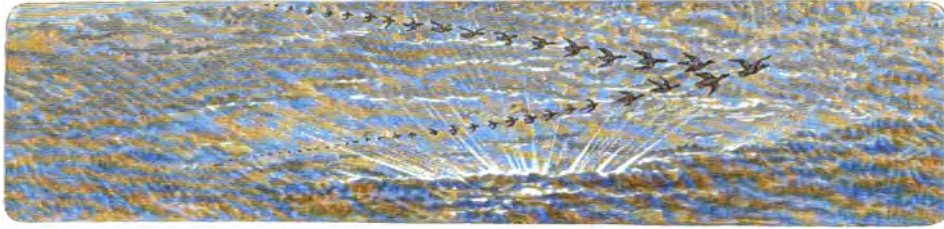


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THE BENEFITS AND THE ABUSE OF OUTDOOR SPORTS.



IT is fair to assume that healthy boys grow up to be healthy men, in cases where, during their growth, they are given a reasonable opportunity for such mental and physical recreation as will keep the fountains of life clean and active.

Every boy should be taught to fully understand the dignity of labor, and to comprehend the necessity of drudgery and patient, humble persistence in the pursuit of a worthy ambition. But sports of an active, outdoor sort are so heartily craved and so keenly enjoyed by strong and wide-awake boys, that, aside from the mere question of health, it would seem harsh to deprive them of it, unless some sufficient reason could be offered for so doing. The play-ground, as it is often limited by well-meaning parents and teachers, is very unsatisfactory.

Outdoor play should have a better purpose in it than simply to kill time. There are but two ways to knowledge,—one is through the direct study of Nature; the other is through the study of Nature at second-hand, by means of books and teachers. These two ways should, as nearly as possible, be made one.

Knowledge gained during the hours of recreation falls into the mind, as the dew falls into a flower, by the grace of Nature. The young mind is so receptive and responsive that it needs only a little judicious directing and restraining in order to take in and assimilate a vast amount of the raw material of wisdom.

The abuse of sport is like the abuse of wholesome food: it creates an unnatural appetite that leads to great harm. But, on the other hand, a reasonable indulgence in such outdoor recreations as are varied and properly exciting in their nature, stimulates and strengthens, like wholesome food judiciously taken.

It is not too much to say that outdoor exercise, especially where it extends to occasional excursions through fields and woods, assists in the formation of

the habit of close observation and a correct mode of thinking. The mere book-knowledge of the student is given a freshness more like that of Nature, by blending with it the freedom caught from the liberal suggestions of the growth, the color, the combinations, and perspective of objects and scenes in the open air.

Boys should learn, under careful and skillful teachers, how to sail a boat, to row, to swim, to cast a fly, and to shoot with the gun. As a rule, accidents happen only to the untrained and careless. It requires great care to become skillful in any art; therefore, the skillful man is apt to be a careful one.

Absolute prohibition often tends to create desire for the thing prohibited, where, in a majority of cases, if a judicious indulgence were permitted, no tendency toward excess would be engendered. The appetite in boys for stirring sports is a natural and proper one, and there is no surer sign of physical morbidity than a decided indifference to the allurements of active exercise in the open air. On the other hand, one of the strongest indications of healthful and promising vigor, alike in mind and of body, is the restless desire to be out and about in the wind and the sunshine. Of course there must be method and restraint exercised by parents, teachers, and guardians, in order to prevent aimless habits or willful desire for excessive indulgence in mere play.

Most boys will be satisfied with a very moderate liberty in outdoor recreations, if a fair share of good literature, pure and breezy, suited to their natural tastes, be furnished for their reading. Truthful, well-written accounts of adventure and observation by "flood and field" have a decided and lasting charm for boys, and may be read without any such results as flow from the secret and forbidden devouring of impossible and crime-steeped dime novels. From the most ancient times this taste for sports has been recognized as manly, and the youth of all the most enterprising nations have been carefully educated to endure and delight in vigorous bodily exercise.

As a rule, the boy who, by fair and honorable means, excels in the plays and sports in which he engages, will be found in after life excelling in laudable business enterprises with the same cleanness of method and suppleness of action.

Sedentary pursuits are far more apt to induce that weakness of nerve and of will-power which makes the inroads of vice easy, than are those that give active exercise in the open air; as a fortification against temptation, therefore, it is wise to allow boys all the outdoor sports possible, consistent with a fair amount of study and work.

The greatest scientists, philosophers, artists, and poets of the world in all ages have been ready to bear testimony to the debt they have owed to "outdoor observations"; and it is one of the most lamentable abuses of the sportsman's privileges that so few examples of the note-book-keeping amateur are found among those who annually spend their vacations by field and flood. Every boy

should be impressed with the value of the habit of reducing to systematic record careful and minute observations of whatever falls under his eyes during the course of his rambles. Facts are the valuable crystals in the intellectual mine, and a great and well-arranged collection of such facts constitutes mental wealth. A few boys, aware of this, seem naturally to grow into the Darwins, the Humboldts, the Newtons, the Emersons, the Shaksperes, the Goethes, the Hugos, the Napoleons.

No man is liberally educated who does not know as much about Nature as he does about books, no matter how great his culture is. The school of the woods and hills and fields and streams is that from which our greatest thinkers have been graduated.

But mere angling for the wanton pleasure of killing the largest number of fish, or mere shooting for the purpose of destroying the greatest possible quantity of game, or mere training with the low aim of becoming a "champion" athlete, can not fall within the golden limit of healthful sport. True sport gives a fresher atmosphere for thought; it lets the sunshine and the dew and the perfumes of morning into our lives; it makes us cheerful and liberal; it spreads within us horizons as wide as those we see in our open-air rambles; it sends us back to the necessary drudgery of our pursuits, full of pluck and life and vim.

Sports should not be allowed to become the whole or any large part of our existence, but they should be used, just as is medicine, when needed, or as wise men use luxuries.



MARVIN AND HIS BOY HUNTERS.





MARVIN AND HIS BOY HUNTERS.

BY MAURICE THOMPSON.

I.

CONSIDERING THE QUESTION.

TWO strong, fair-haired, blue-eyed boys approached their father as he sat by his pleasant library window reading.

"Father," said the older boy, a youth of about fifteen years of age, "we have something very serious, Hugh and I, that we wish to submit to you."

"And what is it, Neil?" inquired Mr. Burton, lifting his kind eyes from his book, and looking first at Neil and then at Hugh, as they stood flushed and excited before him.

"We wish you would let us go to a new sort of school," said Neil.

"Well, what sort of school is it?" Mr. Burton demanded, in his usual cheery tone.

"Oh, it's a shooting school," cried Hugh, who was a quick, impulsive boy; "it's going to be immense, so Tom Dale says; and Ed Jones is going, and ——"

"Hold on, Hugh," said Neil, gently interrupting him; "let me explain the whole thing to father, so that he can understand. You see, there's a man who has a shooting gallery ——"

A decided frown from Mr. Burton cut Neil's enthusiastic description short. For more than a year the boys had been begging for a gun, and the kind father had exhausted his ingenuity in the effort to invent a sufficient number of excuses for not promptly meeting their desires. In fact, Mr. Burton did not like guns himself, and was very much opposed to allowing boys to handle fire-

arms. As is the case in most villages, there had been in Belair, where our story begins, two or three distressing accidents through the carelessness of boys with guns, and it made a chill creep up the father's back to think of trusting one of his dear boys to the chances of such dangers. Of course, Neil and Hugh did not stop to reason about the matter. Other boys had guns. Only the day before, George Roberts, a young playmate of theirs, had brought in half a dozen meadow-larks, killed with his single-barreled shot-gun at his father's country-place. They had listened to George's enthusiastic description of his day's sport, until that night they dreamed it all over again.

"It hardly seems fair that we can't have such fun," Hugh had said to Neil, after George had gone.

"Of course, father is right," said Neil, who was a proud, honorable boy; "but I don't see why guns can't be made safe for boys."

"They are safe," insisted Hugh. "I know perfectly well that I'd never hurt myself or any one else with a gun if I had one. What's the use of being careless? I don't see any excuse for all these accidents."

"That's what I say, too," said Neil. "If you keep the muzzle of the gun pointed away from yourself, how is it going to shoot you, I'd like to know?"

But now a man had fitted up a "shooting school" in the village, and the boys were all anxious to go. For five cents, a boy could shoot three times at a target; and the big-lettered bills posted here and there announced that extreme care would be taken to prevent accident. "Surely," thought Neil and Hugh, "Father will not object to our trying our hands once or twice in a safe shooting school."

But Mr. Burton did object very promptly, and in a tone so decided that the boys turned dolefully away. He called them back, however, and explained to them that a shooting gallery was a place where all sorts of rough fellows congregated, some of whom would bet and swear, and that it was no place for good boys.

"I did n't know that," said Neil; "I thought it would be all right, and — and I — I wanted to learn to shoot, like other boys."

Mr. Burton looked steadily at the boys. He was a very kind man, and loved his children dearly. It was because he loved them that he had so long refused to allow them to have a gun. He had always believed that a dog and a gun could ruin any boy, especially if the boy had his own way. No doubt, in a measure, he was right. Boys need the directing care of grown-up men in almost every pursuit, particularly where danger is involved and where some fearful accident may result from the slightest mismanagement.

"Boys, will nothing satisfy you but guns?" Mr. Burton said this in a hopeless sort of tone that brought a quick flush to Neil's cheek.

"I don't believe I can ever be satisfied without a gun," eagerly exclaimed Hugh.

"Well, I can," said Neil, proudly. "If it is n't right for me to have a gun, I'll try and not want one."

"But it is right," insisted Hugh, going nearer Mr. Burton. "All the boys that amount to anything have guns. Philo Lucas has a double-barreled one."

Neil was amazed at Hugh's energetic way of pushing the matter; he looked at Mr. Burton to see how it impressed him.

"I heard a man say not long ago," remarked the father, "that he thought he should have to prosecute Philo Lucas."

"Oh! What for?" both boys inquired in a breath.

"For killing robins and meadow-larks, which is against the law."

"Meadow-larks! Is it unlawful to shoot meadow-larks?" cried Hugh.

"Yes; and all other insect-eating birds not in the list of game-birds," replied Mr. Burton.

The boys looked at each other as it flashed into their minds that George



"It flashed into their minds that George Roberts was a law-breaker."

Roberts was a law-breaker and liable to be fined or imprisoned for killing those meadow-larks.

"But we wont shoot any of those little birds," Hugh hurried to say; "we'll shoot quails and ducks and snipe and ——"

"What will we shoot them with?" said Neil, smiling rather grimly.

"Oh, but Papa will buy us some guns! Wont you, Papa?" cried the enthusiastic Hugh.

Mr. Burton rose and put his book on a table. His face wore a troubled expression. It was plain to him that a crisis in his boys' lives had been reached, and that they must be helped safely over it.

One thing was sure, he could not consent to allow Neil and Hugh to be running over the country with guns in their hands, with no safe person to direct and restrain them.

He walked back and forth for a while, the boys eying him half hopefully, half despairingly. Presently he said:

"Neil, will you and Hugh promise me that, if I consider this question of guns carefully and conscientiously with a view to your best interests, you will cheerfully abide by my decision?"

"Oh, yes, yes!" cried Hugh in a second; "and I want mine a double-barrel, with engraved locks, and a pistol-grip to the stock!"

Mr. Burton smiled, in spite of the gravity of the situation. Neil laughed, too, at Hugh's sanguine forwardness.

"I shall want ten days of time to study this subject," said Mr. Burton; "and at the end of that time, I shall decide guns or no guns, and the matter is then to be at final rest."

"Yes, sir," said Neil; "I shall be satisfied with your decision, for I know that you know best."

"Oh, Papa, but you must n't decide against us. I do want a gun so much, and I'll be so careful!" cried Hugh, almost trembling.

Mr. Burton dismissed his sons, promising to study the subject of guns for boys very carefully, and to let them know his conclusion at the end of ten days. He was a conscientious, prudent man, full of keen sympathies with the tastes of healthy boys, and he greatly desired to give the fullest scope consistent with safety to the development of strong, manly natures in Neil and Hugh. He had never been able to join in any field-sports himself, owing to a lame knee, and consequently he knew very little about guns or their use. He had often imagined, however, what excitement there must be in following the beavies of game-birds from field to field in the crisp autumn weather, or in flushing the swift-winged woodcock from marshy thickets in July. He had the sportsman's instincts, but his unfortunate lameness had shut off from him any active participation in the sportsman's pleasures. This, no doubt, served to strengthen his desire to see his boys have all the freedom that the accident of his life had denied to him.

So Mr. Burton began a systematic examination of the subject of allowing boys to learn the use of fire-arms. He consulted with sportsmen on the one hand, and on the other with men who opposed field-sports. He carefully weighed all the arguments of both sides. He tried to make of himself an impartial judge; but it was no easy matter. His solicitude for the welfare of his sons, the well-known danger of fire-arms, the tendency of too much indulgence in

field-sports toward idleness and an unambitious life, and the earnest protest of some of his most trusted friends against allowing boys to have guns, would overbalance his desire to please Neil and Hugh.

When the ten days had passed, the decision had been reached, however, and what it was will be told in the next chapter.

II.

UNCLE CHARLEY FROM TENNESSEE.



Mr. Burton.

WHILE Mr. Burton was in the depth of his dilemma about guns, his brother Charles, whom Neil and Hugh had always called Uncle Charley, came, on a visit, from his plantation home in Tennessee. It was the day before the ten days' limit allowed for Mr. Burton's decision when Uncle Charley arrived, bringing his gun with him. Almost the first thing he said was :

"How far is it to the nearest prairie? Are the prairie-chickens as plentiful as usual this season?"

He was an inveterate sportsman. Neil and Hugh were delighted. They felt sure that Uncle Charley would use his influence with their father in favor of letting them learn to shoot.

He was a tall, dark man with a long moustache and curly black hair, very kind and gentle in his manner, and exceedingly fond of boys, though he was a bachelor. Of course, he had a great deal to talk about with Mr. Burton before he could

find time to say much to Neil and Hugh, who were longing to draw him out upon the subject nearest their hearts. But Hugh, who was always inclined to be irrepressible, would manage now and then to slip in a word

or two about guns and hunting. Neil, who was older and steadier, wisely held his tongue.

It was a moment of breathless interest when Mr. Burton, without any preliminaries whatever, suddenly said to his brother in the hearing of the boys:

"Charles, I have a gun question that I must settle for Neil and Hugh, and I want your advice."

"Well," said Uncle Charley, blandly, "what is the nature of the question?"

"Are the boys large enough to be trusted with shot-guns? Ought they to be allowed to have them?"

Mr. Burton put these questions with intense gravity of voice and manner. Uncle Charley looked at Neil and Hugh, and smilingly shook his head.

"Rather small, rather small," he promptly replied.

Neil turned pale, and the tears actually sprang into Hugh's eyes.

"That is just my opinion," said Mr. Burton; "I have been considering the matter for some days. The boys have been asking me to buy them guns. They promised to stand manfully by my decision, and I am glad that you, who know so much about guns and shooting, have helped to confirm me in my first impression."

"The boys are rather small," said Uncle Charley, reflectively; "but I don't know,—they look like careful, sensible lads. How old are you, Neil?"

"I am past fifteen, sir," the boy replied, with a touch of pride in his tone.

"And I'm thirteen, going on fourteen," cried Hugh.

A tender, sympathetic light had come into Uncle Charley's face. He fully appreciated the hopes and fears of his young kinsmen. He himself had all the feelings of a grown-up boy.

"Suppose we sleep over this question," he said to Mr. Burton, "and possibly we may see through it more clearly in the morning."

By this time, Hugh's heart was jumping and thumping so, that he was sure Uncle Charley would hear it. As for Neil, he gave Uncle Charley a grateful look, which was perfectly understood.

That night, the boys lay in their bed and talked over the probabilities.



"The boys are rather small," said Uncle Charley.

"Oh, I'm sure we'll get our guns now," said Hugh. "Uncle Charley is on our side; I saw that; and he'll have influence with papa."

"If father has n't already made up his mind, you are right," assented Neil; "but if he has decided against us, Uncle Charley never can change him."

"It would be too bad if all our hopes and plans should fall through now, would n't it?" said Hugh.

"Yes, but we'd really be no worse off. We've always had a good time, you know," philosophized Neil.

Greatly to the disappointment of the boys, neither Mr. Burton nor Uncle Charley mentioned guns or shooting next morning. Quite early, the gentlemen drove away from the house, and did not return till late in the afternoon. Then some friends came to dine, and the boys had to go to bed again without any further information.

"They have gone and forgotten all about it," grumbled Hugh. "It's just like men; they don't think a boy is worth noticing."

"It does look as if we are in for a little disappointment," said Neil; "but there's no way of helping it that I see. We'll just have to wait and be contented with what we have."

"But I can't be contented, and it's no use trying," cried Hugh. "It does seem too bad for anything."

"I guess father had made up his mind sound and solid before Uncle Charley came," said Neil, "and so the matter will be dropped right where it is."

"Why, I thought I could almost feel a gun in my hands when Uncle Charley said to papa, 'Suppose we sleep over this question.' I was perfectly sure it was all right then; were n't you, Neil?" queried Hugh.

So two or three days passed by, until at last, one morning, Uncle Charley had everything ready to go to the prairie to hunt prairie-chickens. Then, all of a sudden, he said to Neil, as if the thought had just occurred to him:

"How would you and Hugh like to go along with me?"

Hugh jumped as if something had stung him, and Neil was quite as much surprised.

"I should like it ever so much," the latter replied.

"But we have n't any guns," exclaimed Hugh.

"Oh, well, you can watch me shoot, and you can carry game for me, and help drive the wagon," said Uncle Charley, cheerfully. "There'll be lots of fun besides shooting."

Of course, the boys did not need a second invitation. Half a loaf was much better than no bread at all. If they could n't have guns of their own, they need not refuse to go and watch Uncle Charley shoot. Then the drive out to the prairie and a week spent in the open air would be jolly sport. Just how much fun two healthy, good-natured boys may get out of such an excursion can not be exactly measured. There is the sunshine, and there are the blue sky, the

grass like a green sea, the vast fields of corn, the cool wind, the freedom — it needs a boy to fully appreciate such things.

Neil and Hugh forgot their disappointment in the matter of the guns, and entered joyfully into the spirit of the trip to the prairie.

Two wagons had been made ready: one, for the dogs and camp utensils, which was to be driven by a man who was also to serve as cook; and one with springs, for Uncle Charley and the boys. When they started out of the village, many of their young friends looked wistfully after them, as if they, too, would like to be in the party.

Neil and Hugh waved their hats and shouted good-bye as the wagons clattered over the graveled street past the village store and post-office. They were soon out in the open country, in a wide lane between green hedges, with fields on either hand, and farm-houses showing here and there among the orchards.

It was mid-August and the sun shone fiercely; but a breeze came off the prairie, cool and sweet, smelling of stubble and wild grass.

The horses that drew the wagons were strong, well-fed animals, anxious to go; and Uncle Charley let them trot along briskly, for he, too, was chafing with every moment's delay. He had visions of large coveys of prairie-chickens in his mind, and, with all a Southern sportsman's enthusiasm, was longing to loose his dogs and handle his trusty gun.

Uncle Charley's gun was a breech-loader of the finest English make, with beautiful Damascus steel barrels, engraved lock-plates, walnut stock, and rebounding locks. Hugh took it in his hands, and was surprised to find how light it was.

"Why, this gun would just suit me," he exclaimed, in surprise. "I could handle it without any trouble, I'm sure. How much did it cost you, Uncle Charley?"

"Four hundred dollars," was the answer.

"Whew!" whistled Hugh, looking rather wildly at Neil. "No wonder papa don't care to buy us guns! It would take eight hundred dollars to get us one apiece!"

Uncle Charley smiled, all to himself, in a sort of mysterious way, as if he were thinking of something he did not desire to talk about.

Meantime, the wagons clattered along the smooth road, the horses' feet raising a cloud of dust, which shone almost like gold in the early morning sunlight. The big wagon that held the dogs and camp things was behind, and this cloud of dust sometimes nearly hid it from view, the man and the dogs looking, through the film, like those dim figures some artists put into the backgrounds of their sketches.

As they passed along between the farms — those broad, liberal, fertile farms of the West — they saw steam-threshing machines puffing away out in the fields, in the midst of stacks of wheat and rye, where men and boys were work-



"They were soon in the open country."

ing hard in the flying chaff and tumbling straw. The corn was in silk and tassel, and the meadows of timothy had been mowed, the hay-cocks standing thick on the greening stubble. They saw meadow-larks flying about in the bright sunshine or standing in the tufts of clover, their breasts gleaming like polished brass.

"Why is it against the law to shoot larks and robins?" said Hugh; "I don't see why it's any worse to kill them than it is to kill quails."

"Why is it worse to kill a horse than it is to kill a pig?" inquired Uncle Charley.

"Because a pig's good to eat and a horse is n't," quickly answered Hugh.

"Is n't there a better reason?" said Uncle Charley; "is n't a horse more useful to us as a servant than he would be for food, even if his flesh were delicious?"

"Certainly," said Hugh.

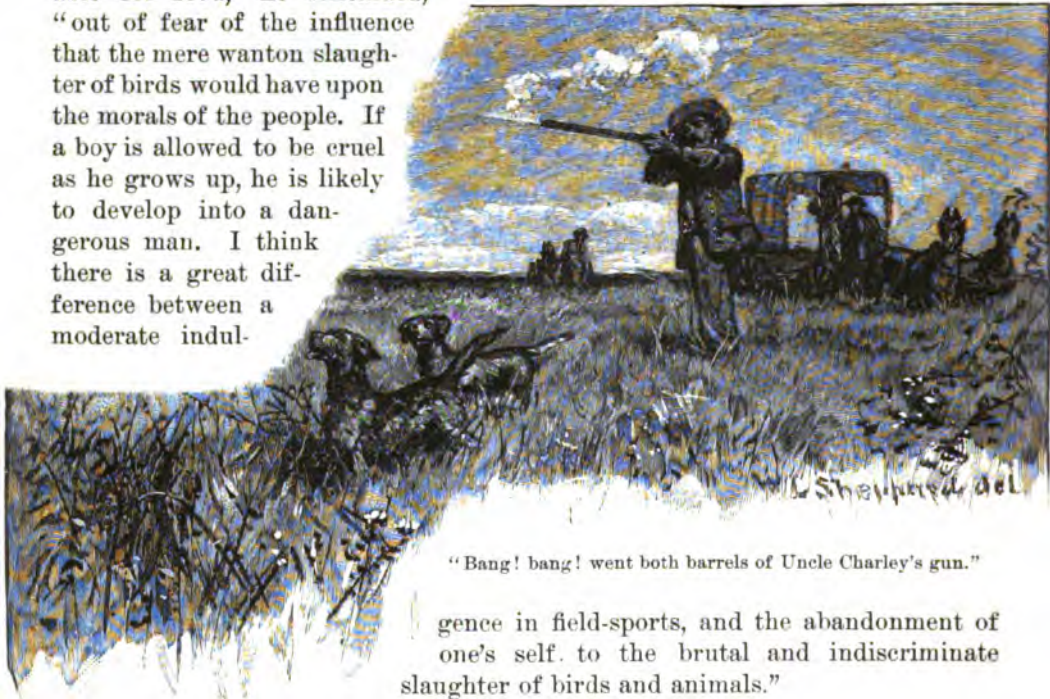
"Well, a meadow-lark is a very useful bird to the farmer. It eats great numbers of insects, eggs, and larvæ that would work great harm to wheat, corn, and orchards; then, its flesh is not very good; while a quail eats grain, and its flesh is excellent food. Do you see the difference?"

"That does seem reasonable," said Hugh; "I had n't thought of it in that way. A meadow-lark is like a horse, it helps the farmer make his crop by destroying bugs and things; and the quail is like a pig, it eats corn and wheat and gets fat, to be killed and eaten."

Uncle Charley laughed.

"I see you apply a theory in a very practical sort of way," he remarked. "But the law protects all kinds of harmless birds, the flesh of which is not profitable for food," he continued,

"out of fear of the influence that the mere wanton slaughter of birds would have upon the morals of the people. If a boy is allowed to be cruel as he grows up, he is likely to develop into a dangerous man. I think there is a great difference between a moderate indul-



"Bang! bang! went both barrels of Uncle Charley's gun."

gence in field-sports, and the abandonment of one's self to the brutal and indiscriminate slaughter of birds and animals."

They had now reached the edge of the open prairie. As far as they could see, the land rolled away in dull, green billows. The grass was short on the swells and tall in the sloughs. Herds of cattle were scattered from near at hand to where they barely speckled the horizon.

Uncle Charley gave Neil the lines.

"You drive slowly along," he said, "while I work the dogs over some of this ground."

Getting out of the wagon, gun in hand and cartridge-belt around his waist, he motioned to the man to loose the dogs,—two beautiful white and brown setters that knew just what he wanted them to do.

Neil drove slowly along over the grass, for they had left the road, and he and Hugh closely watched Uncle Charley, who was walking briskly after the galloping dogs.

"Look at Don and Belt!" cried Hugh. "Did you ever see more beautiful dogs?"

Don was the larger dog, being tall and strong-limbed, while Belt was slender, nervous, and active. They ran in parallel lines some thirty yards apart, their heads well up, and their silky, fringed tails waving like banners.

"Is n't it jolly!" exclaimed Neil, as his excitement overmastered him. "I never saw anything so fine!"

"If we only had guns," said Hugh, leaning over the side of the wagon, "how perfectly happy we should be!"

"Look at Don!" called the man from the camp-wagon.

The big dog had stopped suddenly with his head turned aside and his tail as stiff as a stick. Belt stopped too and looked toward Don.

"He knows what he's about," said the man. "There are prairie-chickens there, sure."

They saw Uncle Charley begin to move more cautiously, holding his gun in front of him. He had not taken many steps when, with a great buzz, up rose a large flock of birds.

Bang! bang! went both barrels of Uncle Charley's gun. The boys saw two of the birds tumble down. Hugh yelled like a young Indian, and, jumping out of the wagon, ran to where Uncle Charley stood. Don "retrieved"—that is, brought in one bird and Belt the other.

Neil wished to go and examine the game; but the horses were restless, and he could not leave them. Hugh, however, brought the birds to the wagon so that Neil could see what fine, bright-feathered young prairie-cocks they were.

Uncle Charley had marked with his eye the spot where the rest of the flock had settled down in the grass, and so, motioning the dogs forward, he tramped away, reloading his gun as he went. Hugh climbed into the wagon again and Neil drove on.

"What is the naturalist's name for prairie-chicken, Neil?" said Hugh, holding up one of the birds by its wing.

"Pinnated grouse, or *cupidonia cupido*, is what scientific men call the bird," replied Neil, who was rather proud of his ornithological knowledge.

Soon Belt came to a stanch stand and Don "backed" him,—as the man in the wagon said,—that is, Don pointed because he saw Belt point.

Neil stopped the wagon to watch Uncle Charley "flush," or scare up the birds.

A single grouse rose and flew off to the left, giving Uncle Charley a hard chance. He fired promptly, first his right-hand barrel, then the left, missing with both.

"Well, well!" cried Hugh; "I could have killed that bird myself!"

Uncle Charley reloaded his gun, and walked on. Another and another bird buzzed up. Bang! bang!—one hit and one miss. The sport now grew intensely

exciting. The grouse were just enough scattered to give the gunner a chance to flush them one at a time. When he came back to the wagon, he had eight birds, which, with the two already there, made ten in all.

The dogs had their tongues out, and were panting vigorously.

III.

UNCLE CHARLEY MEETS AN OLD FRIEND.

"**T**HAT is what I don't like about bird-hunting on the prairies," said Uncle Charley, as he helped the dogs into the camp-wagon; "it's so hard on the dogs to do without water. See how Belt pants! He's almost famished for a drink and a bath. We'll have to drive on till we find water."

There was a big box of ice in the camp-wagon, upon which the birds were put to keep cool. The ice was packed in saw-dust to keep it from melting. Belt lay down by this ice-box and seemed to greatly enjoy its effect.

Our friends drove on, but it was late in the afternoon before they found a suitable spot on which to camp. This was under some scrubby oak-trees, by the side of a sluggish little brook. There was a spring of very good water close by. A farm-house was in sight, on a high swell of the prairie. It was flanked by broad-winged barns, and half-hidden in a dusky apple-orchard. A tall windmill, with a gayly painted wheel, was shining and fluttering in the bright sunlight.

As soon as the wagons were stopped the dogs leaped out and ran to wallow in the brook.

The man who had driven the camp-wagon soon had the horses cared for and the tents put up. The luncheon brought from home was spread upon a clean cloth, and the boys thought they had never before eaten anything quite so good. The long ride in the open air and the excitement of the sport had whetted their appetites. Hugh said the sun had burned the back of his neck so badly that he believed the skin would come off; but he was ready to follow the man-of-all-work to the farm-house, where they got a basket of apples. While they were away Uncle Charley gave Neil his first lesson in handling a gun.

"The first thing to be learned," said he, "is to stand properly. Plant both your feet naturally and firmly on the ground, so that the joints of your legs are neither stiff nor bent; then lean the upper part of your body slightly forward. Grip the gunstock just behind the guard with the right hand, the forefinger lightly touching the foremost trigger, that is, the trigger of the right-hand barrel. The stock of the gun, a few inches in front of the guard, must rest



Don "retrieving."

easily in the hollow of the left hand. Hold the muzzle of the gun up and slanting away from you, so that the lower end of the butt is just lower than your right elbow. Now, if both hammers have been cocked, and you gently and swiftly draw the butt of the gun up to and against the hollow of the right shoulder, you will find yourself in good position for taking aim, which is best done by keeping both eyes wide open, and looking straight over the rib between the barrels with the right eye."

Neil took Uncle Charley's gun, and began to try to follow his instructions. "But how am I to know that I am sighting with my right eye, if I keep both eyes open?" inquired he.

"Oh, you'll soon discover that trick," said Uncle Charley, "by fixing your aim with both eyes open, and then, holding perfectly steady, closing the left eye; if the line of sight now changes, you have not sighted correctly; if it remains fixed, the aim has been taken with the right eye."

Neil tried it over and over again with great care, until he was quite sure he had mastered the method. He was a cool-headed, methodical boy, not in the least nervous, and what he undertook he always tried to do well.

"Now," said Uncle Charley, "I am going to see if you can hit anything."

He looked around to find something on the ground that he could throw into the air for Neil to shoot at; but he could not see anything.

"Oh, well," he said, taking off his hunting-cap, "I guess this will do. Now take your position."

Neil prepared himself, holding the gun just as Uncle Charley had taught him. He was determined to hit that cap if he could, for he thought Uncle Charley meant to make fun of his marksmanship by thus offering to toss up his own cap.

"Are you ready?" cried Uncle Charley, standing about twenty paces from Neil.

"Yes," was the prompt answer.

Whirling over and over, up went the cap through the air in a high curve.

Neil aimed as he had been directed and banged away.

The dust and lint flew from the cap in a small cloud. Neil had purposely fired the left-hand barrel, which was close-choked for long-range shooting; consequently a very large number of shot had hit the cap, fairly riddling it with holes.

At a later point in this story the reader will have the methods of making gun-barrels explained, so that he will fully understand what close-choked means.

Uncle Charley went to his cap and picked it up. He smiled rather ruefully as he examined it.

"Pretty well done, I should say," he exclaimed; "but, Neil, which barrel did you fire?"

"The left-hand one," Neil answered, smiling in turn.

"But I told you to put your right forefinger on the front trigger."

"So I did," said Neil, laughing heartily, "but I slipped it off lightly and pulled the other trigger."

"And why did you do that?"

"Well," said Neil, "I saw that you had a contempt for my shooting ability, so I thought I'd give your cap a good dose!"

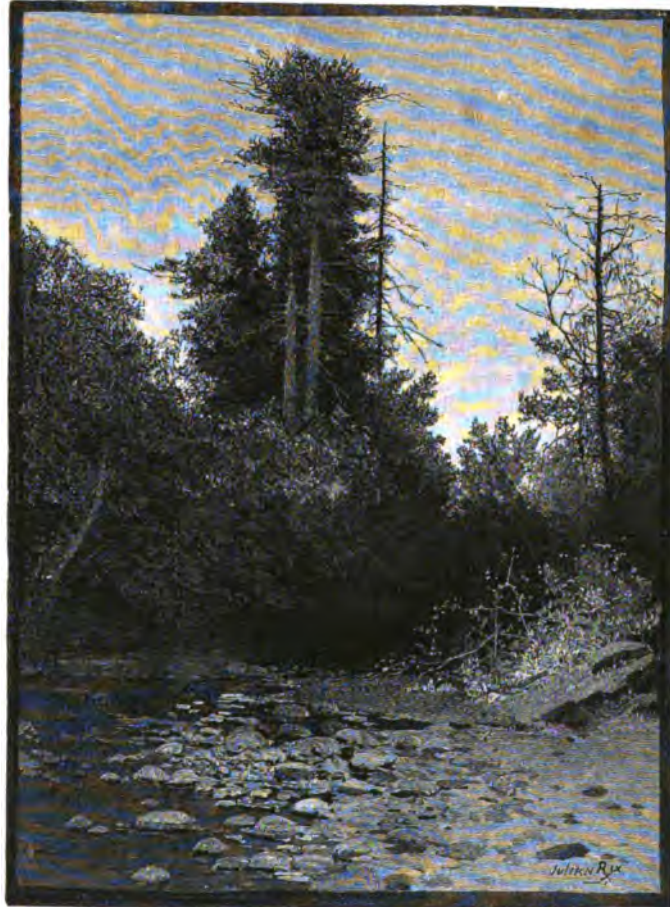
Uncle Charley still looked at his wounded cap. "Well, well," he said, "if this had been a bird you would n't have left a feather on it! You did splendidly, however; it was a fine shot; you hit my cap with the very center of your load."

Secretly Neil felt quite proud of his success, but he kept cool and said but little.

"Becareful there!" cried Uncle Charley, as Neil lowered the gun to the ground, "never set your gun down with a hammer up. That is the cause of many deplorable accidents."

"Oh, I forgot!" said Neil, his face flushing.

"You must never forget anything when you are handling fire-arms. To avoid accident you must be constantly on the alert and always cautious, not overlooking even the slightest precaution."



The first camping place.

When Hugh and the man returned from the farm-house, the sun had sunk low in the west, and the prairie-chickens were booming their peculiar calls far out on the rolling plain.

"Hugh," said Uncle Charley, "I shall leave you and Mr. Hurd" (the man-of-all-work) "in charge of the camp, while Neil and I go for a short tramp among the chickens."

Then he took his gun, and, calling the dogs, started down the side of the little stream, closely followed by Neil. Hugh felt quite tired, so he lay down at the root of a tree and soon fell into a light, sweet sleep, while Mr. Hurd went about preparing the supper.

When they had gone a little way from camp, Uncle Charley said to Neil:

"Here, take my gun and let's see if you can kill a

Of course Neil He took the gun, lowed the dogs, signs of scenting stream. Very soon up from among and thick grass As quickly as possible best aim he could, right barrel, then the left; but the big bird flew on as though nothing had happened.



"Neil took the best aim he could."



prairie-chicken." was delighted. and eagerly followed as they showed game down the a large bird flew some low willows at the water's edge. sible Neil took the and fired first the

Uncle Charley laughed heartily, and Neil looked rather crestfallen and abashed at his failure.

"If you had killed that duck, my boy, you would have been liable to a fine," said Uncle Charley.

"Why, was that a duck?" exclaimed Neil, still gazing blankly at the departing bird; "I thought it was a grouse."

"Well, you're saved this time," added Uncle Charley; "those cartridges you fired had no shot in them!"

"I thought something was wrong," said Neil, "for I aimed exactly at that bird. I did n't understand how I could miss it."

"Now, then, I'll put some properly loaded cartridges in the gun," said Uncle Charley, laughing grimly; "but you must n't fire at any bird but a prairie-chicken, because the law forbids it at this season."

They went on, and the dogs soon pointed a flock of grouse in some low, dry grass on a windy swell of the prairie. Neil had seven fair shots, and killed just one bird. He could not understand how this could happen. He tried very hard to aim just as he had been instructed, but he kept missing, nevertheless.

When it began to grow dusky on the prairie, and they had turned toward the camp, Uncle Charley explained to Neil why he had missed so many birds. He said:

"In the first place, you are in too great a hurry, and consequently shoot too soon. Then, again, you aim right at a flying bird, which is wrong, save when it flies directly away from you. It is absolutely necessary to aim somewhat ahead of the game when its course is to the left or right of your line of aim."

"Well," said Neil, "I'll try and remember that."

When they reached the camp it was quite dark, but Mr. Hurd had a blazing fire, which lighted up a large space. A pot of coffee was steaming on a bed of coals, and over this some birds were broiling, filling the air with a savory smell that made Neil very hungry. They were rather surprised to find a strange man sitting by the fire. He stood up when they approached, and then he and Uncle Charley hastened toward each other and shook hands.

"Why, my old friend Marvin!" cried Uncle Charley. "How glad I am to see you."

"Charley, my boy, how d'ye do?" said Marvin.



A duel on the prairie.

IV.

MARVIN THE MARKET-HUNTER.

HUGH had been quietly sleeping all this time at the foot of the tree; but when he heard Uncle Charley's voice, he awoke and sat up, rubbing his eyes with his fists. At first he could hardly remember where he was, and stared wildly about; everything looked so strange in the glare of the firelight.

"See what I brought down!" cried Neil, going up to his brother and holding out the prairie-chicken.

Hugh's memory cleared as by magic, and in a moment he was wide awake.

"Oh, did Uncle Charley let you shoot with his gun?" he inquired, his eyes growing bright at the thought.

"I should think he did," said Neil; "have n't you heard me firing away?"

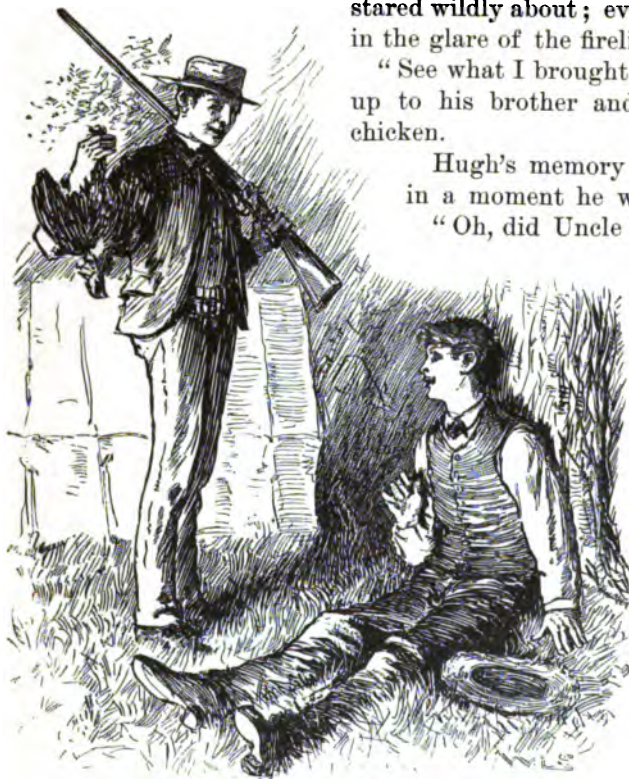
"I believe I've been asleep," said Hugh; "but who is the gentleman Uncle Charley is talking with?"

"His name is John Marvin; they seem to be old friends; Mr. Hurd says he's a market-hunter."

"What is a market-hunter?" asked Hugh.

"A market-hunter is a man who kills game to sell. He makes his living by hunting," replied Neil.

Supper was soon ready, and Mr. Marvin joined them in eating the well-cooked meal. It delighted the boys to hear him and Uncle Charley talk over their hunting adventures and their experiences by flood and field, for they had both



Neil's first prairie-chicken.

been to many wild and interesting places, and had seen many strange birds and animals.

Mr. Marvin said he had been having good luck with prairie-chickens since the opening of the season. Birds, he said, were far more plentiful than usual, and he hoped to make enough money, by the time cold weather came on, to enable him to go South, where he hoped to hunt throughout the coming winter.

Mr. Marvin was a man of about fifty years of age, and had followed market-hunting all his life. He seemed to know everything that was worth knowing about guns and dogs and the habits of wild game. Uncle Charley evidently regarded this man's opinions as authority on outdoor subjects. In fact, Neil and Hugh soon discovered that Mr. Marvin was a very well-known and highly esteemed man among the best class of American sportsmen and naturalists. He was a regular agent of the Smithsonian Institute at Washington for collecting rare specimens of nests, eggs, birds, fishes, and animals.

They all sat up far into the night, planning various little expeditions, and enjoying the cool breeze and the fresh perfume of the prairie; and when they lay down in their tents they slept soundly until the eastern sky was growing bright with the dawn.

Marvin's tent was only a little way up the brook from the camp of Uncle Charley and the boys. Just after breakfast he hastened down to say that he had seen a large flock of grouse alight in a field of oat-stubble on the neighboring farm. Uncle Charley made short work with the rest of his meal, slipped on his long rubber boots to protect his feet and legs from the heavy dew, called the dogs, seized his gun, and was off with Marvin before the boys were half through breakfast. Not many minutes later the guns began to boom.

Neil and Hugh could easily distinguish the sound of Marvin's gun from that of Uncle Charley, for the reason that Marvin used a heavy ten-bore piece with five drams of powder and an ounce and a quarter of shot for a charge.

Hugh declared that the gun sounded like a young cannon.

"I guess he'll beat Uncle Charley killing birds," said Neil; "he seems to know more about the business, and then he's had more practice."

"I think I should like to be a market-hunter," exclaimed Hugh, "and just go from one good shooting-ground to another, all the year round, with nothing to do but shoot birds and collect eggs and nests. What a lot of fun it must be!"

"You'd get pretty tired after a while, or I'm no judge," said Mr. Hurd. "It's mighty monotonous work tramping around all the time with nothing but shoot, shoot, shoot from month's end to month's end. That would n't suit me, I can tell you."

"I reckon you could n't hit anything if you tried to hunt," said Hugh quickly.

"I could take a broom-handle and hit you if you gave me very much of your sauce," responded Mr. Hurd, who was inclined to be ill-tempered.

But Hugh only laughed a little and walked away.



Marvin and Uncle Charley make havoc among the grouse.

As the sun rose higher and the grass began to dry, the boys went for a stroll along the brook. They found many beautiful wild flowers, the loveliest ones being large white water-lilies, with broad thin leaves floating on a still pond. While looking at these, they saw an old duck with her half-grown brood of young ones hastily swimming away to hide among the tall weeds on the farther side of the water.

"I see now why the law forbids shooting ducks in summer," said Neil. "If one were to shoot that old duck now, the young ones would not know what to do; they would probably wander about for a few days and die."

The boys gathered some lilies and carried them back to the camp. Uncle Charley and Marvin returned about ten o'clock with a heavy load of birds. Marvin had killed twenty-three and Uncle Charley nine.

"It's no use for me to shoot with Marvin," said the latter, in a tone of good-natured chagrin; "he always doubles my score."

"I told you so," said Neil aside to Hugh. "Mr. Marvin is a very great shot."

Through the middle of the day, while it was too hot to hunt, they all lay in the shade of the trees and talked, or read some books on natural history that Neil had brought from his father's library. Mr. Marvin took great pleasure in listening to Neil as he read aloud from "Wilson's Ornithology." Occasionally, he would interrupt the reading to throw in some interesting reminiscence of his wild-wood rambles, or to make some shrewd comment on the naturalist's state-

ments. Neil soon liked Mr. Marvin very much, and so did Hugh. In fact, the hunter was so straightforward and honest in his manner, so frank-faced and clear-eyed, that one must like him and trust him. He told the boys a great many stories of his life in Southern Florida, with adventures that befell him while he was exploring the everglades and vast swamps of that wild region. He seemed a very encyclopedia of varied hunting experience. Almost any healthy boy will find such a man to be a charming companion; and if the boy is desirous of obtaining knowledge, he can gather a great deal of it from listening to the conversation.

Mr. Marvin soon discovered the great hope the boys had of one day being good shots, so he went to his tent and brought a little sixteen-bore gun that he used for killing snipe and woodcock and other small birds. He took out the cartridges, and handed the gun to Hugh.

"Now," said he, "let me see how you would handle it if you were going to shoot a bird."

Hugh seized the gun, much as a hungry boy would grab a slice of plum-pudding, jerked it up to his shoulder, shut one eye,—which got his face all in a funny twist,—opened his mouth sidewise, and pulled the trigger. They all laughed at him long and loudly. Uncle Charley declared that he would give a dollar for a correct photograph of that attitude.

But Hugh was too much in earnest to be laughed down. He kept trying until he could get himself into passable form; but it was plain to Uncle Charley that he would never be as cool and graceful as Neil.

Hugh's enthusiasm counted for a great deal, however, and might carry him through some tight places where more deliberation and scrupulous care would fail. Mr. Marvin next put some unloaded cartridges in the gun, and allowed Hugh to fire at an apple that he flung into the air. When the cartridges exploded, Hugh winked his eyes and dodged. Even Belt laughed.

"Be perfectly cool and steady," said Mr. Marvin; "you'll get it all right presently."



"Even Belt laughed."

"Of course I will," exclaimed Hugh, his voice trembling with excitement and his eyes gleaming. "I 'd have hit that apple if the shell had been loaded."

"No, you 'd have overshot it," said Mr. Marvin; "you were too slow in pulling the trigger. The apple fell a foot between the time you shut your eyes and the time you fired."

Hugh found much trouble in controlling his eyes; but he finally succeeded in keeping them open while firing, and he soon began to show increasing steadiness and confidence.

Mr. Marvin then explained that the first great rule in shooting at a moving object is to learn to look steadily at the point where you wish your shot to go; and the second rule is to learn to level the gun at that point without any hesitation or "poking." You have no time for taking a deliberate aim at a swiftly moving bird, and to attempt such a thing will make of you what sportsmen call a "poke-shot,"—that is, one who squints, and aims, and pokes his gun along, trying to keep his fore-sight on the flying game. A really good shooter fixes his eyes on the spot to be covered by his aim, at the same time that he swiftly raises his gun and points it in the correct line,—his eyes, his arms, and his right forefinger all acting in perfect harmony together. You observe that when a good musician begins to play on the piano he does not fumble for the keys, but finds them as certainly and as naturally as he winks his eyes. So the shooter must not fumble for his aim, but get it by a swift, sure, and steady movement that is only obtainable by careful and intelligent practice.

Mr. Marvin next put a loaded cartridge in the right-hand barrel of the gun, and said to Hugh:

"Now, sir, you're going to make your first shot, and I wish you to do it just as I have directed; if you do, you'll hit this apple; if you don't you'll miss it. Ready, now. Fire!" and he flung the apple into the air.

Hugh forgot everything in a second, raised his gun awkwardly, squinted one eye, and pulled the trigger. The report of his shot rang out on the prairie, but the apple came down untouched.

"Overshot it," said Mr. Marvin, shaking his head. "You 'poked' badly; and such a squint!"

Hugh looked all over the apple, but he could not find a scratch. "I'll not miss it next time," he cried; but he did. In fact, he shot seven times before he touched the apple.

Mr. Marvin had to scold him several times about carelessly handling the gun. He once said:

"Never allow the muzzle of your gun to point toward yourself or any one else, no matter whether it is loaded or not. If you are careless with an empty gun, you will be careless with a loaded one." Then he added: "I once heard a backwoodsman say that his father proved to him that a gun was dangerous without lock, stock, or barrel."

"How could that be?" said Hugh.

"Why, his father whipped him with the ramrod!" said Mr. Marvin. With a hearty laugh, Hugh admitted that the proof was undeniable, and promised to try to form a careful habit of handling guns.

V.

A LESSON IN WOODCOCK SHOOTING.



THE prairie upon which our friends were encamped was one of those beautiful rolling plains for which Illinois is so justly famous. There were but few inclosed farms in that immediate region, the greater portion of the land being still in its wild, grassy state, and used mostly for pasturing cattle that were attended by mounted herdsman. Sometimes these herdsman would get angry at the hunters for shooting near their cattle. This was not surprising,

however, for the reports of the guns often so frightened a herd that each separate steer would take its own course, and run for a mile as fast as it could go, bellowing furiously. Men who know say that a run like that will take a dollar's worth of fat off each steer; so we can not wonder that cattle-men should grumble at careless sportsmen for causing them such loss. But sometimes the chicken-shooters do worse harm than merely frightening the herds. If a bird happen to be flushed near a herd of cattle, a heedless hunter may shoot a steer instead of the game; then, if the owner is near, he is ready to fight; and you may well believe that a big brown-faced prairie herdsman is a highly dangerous fellow when angry.

Mr. Marvin told of an adventure he once had with a cattle-owner. He said:

"I was shooting on that beautiful little prairie in Indiana called Wea Plain; and when quite near a drove of cattle I flushed a single chicken. I fired, and brought down the bird in good style; but, as luck would have it, the rest of the shot went broadside into a fine fat steer that was grazing about fifty yards away. The bawling that the animal set up was just terrible to hear, and the whole drove stampeded at once. Well, while I was standing there, gazing after the galloping cattle, suddenly 'bang! bang!' went a gun not far away, and both of my fine dogs fell over—dead. I turned quickly, and

saw a furious herdsman sitting on his horse with a Winchester rifle smoking in his hand.

"'Now you put on your best gait and walk a chalk-line from here!'" cried the man. I began to try to explain, but he grew more and more angry, and said he did n't want to hear a word from me. I saw he was desperate and dangerous, so I made the best of a bad situation, and walked away. I believe he would have killed me, just as he had killed my fine dogs, if I had said another word to him."



One of the "ways of woodcock."—Mother Woodcock carrying her young to a place of safety.

"But it was a wicked thing in him to shoot your dogs in that way," said Hugh; "they were not doing any harm. I should have just filled him full of shot if I had been you."

"See here, Hugh," said Uncle Charley, "if I again hear you speak of shooting any one, I'll not let your hands touch a gun any more while we're out. Why, it's horrible. I've been trying to teach you carefulness and prudence so

that it would be safe for you to be trusted with a gun, and here you are talking about murder!"

Hugh's eyes fell, and he looked ashamed of his foolish declaration.

"There is a good lesson in my adventure," said Mr. Marvin, "and you boys must remember it. Never get so excited, in following game, as to forget to be prudent and careful about the safety of others or their property. Of course the herdsman did wrong in killing my dogs; but I did wrong, too, in the first place, by carelessly shooting toward his cattle. Suppose it had been a man or a boy I had hit, instead of a steer,—how miserable I would have been!"

"Yes, and suppose you had turned 'round and killed the man for shooting your dogs," said Neil, "you'd have been hanged for murder, and would not have got your dogs back either."

Hugh shrugged his shoulders at the thought of being hanged. He had spoken without considering; what if he had shot without considering!

The good advice of Mr. Marvin took hold of Hugh's conscience, and he inwardly declared that he would always be very careful what he did with a gun.

The next day was Sunday, and they all rested and read, or strolled along the brook.

Neil, while out by himself, was passing around the edge of what might be called a little oasis in the prairie, a low, swampy spot of ground grown up with a thicket of low willows and elbow brush, when he flushed a woodcock. At once he rightly suspected that quite a number of these exquisite game-birds had collected here to feed upon the insects and larvæ which they could find by boring with their long bills in the mud. He kept his discovery to himself.

Next morning he went early to Mr. Marvin's tent, and asked him for his little sixteen-bore gun.

"I wish to shoot some woodcock down here in a little thicket," seeing that Mr. Marvin hesitated.

"Suppose I go with you," suggested Mr. Marvin. "Are you very sure there are woodcock there? I looked at the place the other day and thought I'd examine it again soon."

"I should be delighted if you would go with me," quickly replied Neil; "will your dogs point woodcock?"

"I should think so," said Mr. Marvin, "they know all about them; but are you sure that any birds are there?"

"I flushed one there yesterday," Neil replied; "and I saw many places where others had been boring in the mud."

Mr. Marvin looked sharply at Neil, and said:

"Where did you learn about the ways of woodcock? You never hunted any, did you?"

"I have read all the books on ornithology that I could obtain," replied Neil.

Mr. Marvin was already getting the guns out, and selecting cartridges loaded with small shot.

"Shooting woodcock is quick work," he said. "Almost every shot must be a snap-shot."

"What is a snap-shot?" asked Neil.

"A shot which is made without any aim," answered Mr. Marvin. "When you are in the bushes and brush, and a bird flies up, you must shoot in a great hurry, or it will get away."

Uncle Charley and Hugh saw Mr. Marvin and Neil going off together across the prairie, and Hugh wondered how it chanced that Neil had thus gained the market-hunter's confidence. Neil was carrying the little sixteen-bore across his shoulder with much the air of an old sportsman, though he was almost on a run trying to keep up with Mr. Marvin, who strode along at a great pace, his head thrust forward, and his eyes fixed on the distant fringe of bushes that marked the woodcock swamp.

The morning was cool and sweet, with a thin film of fleecy clouds across the sky. The grass was dewless, and a little wind blew from the south-west. In every direction the grouse were crying in their mournful, monotonous way. In the east a great flare of red showed where the sun was just getting up behind the clouds. The distant low hills of the prairie looked like ocean waves. Here and there the herds of cattle were scattered, some lying down and some grazing. Neil had never felt happier in his life.

The thicket, or "cripple," as woodcock feeding-grounds are sometimes called, lay in a low place near the border of a thin wood, where the prairie began to break up into a hilly fringe of timbered land.

Mr. Marvin held in the dogs until they reached the margin of the place; then he loosed them, and bade them work. Those well-trained and intelligent animals were eager for sport, and at once began cautiously scenting along the border of the thicket. They were not the same kind of dogs as Uncle Charley's. They were small wiry pointers, with short hair and smooth, sharp tails. Their names were Snip and Sly, and they seemed never to get tired.

"You'd better call Snip and go to the left; I'll take Sly and go to the right," said Mr. Marvin. "We'll be apt to find more in that way."

Snip seemed perfectly content with the arrangement. He went as Neil directed, after giving him a bright look, as if to say: "Ha! you're going to shoot my birds for me, are you?"

Mr. Marvin and Neil were soon lost from each other's sight. Neil went along very cautiously, watching every movement Snip made. In some places the bushes and weeds were so tangled that it required a great deal of struggling to get through them. The ground was like jelly in certain spots, shaking and quivering under Neil's feet. Somehow, Snip passed by a woodcock without scenting it, and it flew up from a spot very near to Neil's feet. Whiz! went its



"The morning was cool and sweet."

wings. Its rise was so sudden and unexpected that Neil was really startled, and he stood gazing at the bird until it dropped again down into the cripple. He had entirely forgotten to shoot at it!

The next moment Snip came to a stanch stand a little farther in the thicket. Neil drew a long breath to try to steady his nerves, held his gun in position, and walked slowly forward. Flip! whiz! Out of a tuft of tangled weeds rose a fine strong bird, its wings gleaming brightly, and its long bill thrust forward. Neil tried to keep cool and aim steadily; but he was so eager to kill the game that he fumbled and poked with his gun before he could pull the trigger, and the bird escaped.

Snip looked inquiringly at the young sportsman, as if at a loss to know what this slow business could mean.

Neil heard Mr. Marvin fire several times. "That means game for the market-man," he said to himself; "*he* does n't get excited."

It required a great deal of tramping before Snip could find another woodcock. This time Neil behaved in a more sportsmanlike way; but he missed the bird, nevertheless. He had shot so hurriedly, in order to hit the bird before it got into the bushes again, that his aim had been wrong.

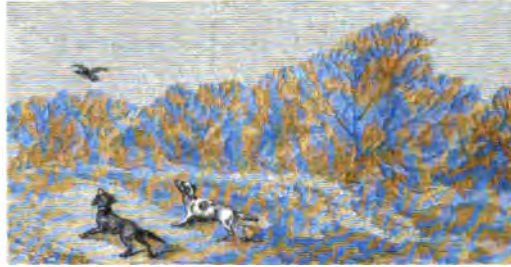
Bang! bang! he heard Mr. Marvin's gun again, some distance off. Just then he stumbled a little, and stepped upon a soft place, sinking instantly to his armpits in a slimy slush of mud and water. He seized a strong bush as he went down, and this was all that saved him, for his feet did not touch bottom. His gun had fallen across some tufts of weeds and grass, so that it did not sink.

"Ugh! ugh!" grunted Neil, as the ugly black mud oozed around him.

Then he began to struggle, trying to get out. But the mud clung to him and he could gain no chance to use the strength of his arms. This frightened him, and he called Mr. Marvin in as loud a voice as he could command. There was no answer. He called again and again; still no answer. The whole surrounding country had suddenly grown as noiseless as midnight. Neil was a brave boy, but his heart sank as he thought of what might now befall him. The mud was cold, chilling him with its disgusting touch. He heard a herdsman singing far away on the prairie, and then the double report of a gun in the extreme distance. Had Mr. Marvin gone off after a flock of grouse? The thought made Neil nearly desperate. He struggled hard and long to draw himself out; but, to his dismay, the bush to which he was clinging began to show signs of giving way. If it should break, he would disappear in the mud and never be seen again.

He called Mr. Marvin again and again, in a high, clear voice. Bang! bang! sounded the gun once more, apparently a little nearer. Neil now screamed and yelled desperately, for his arms were growing tired and weak. He thought of Hugh and Uncle Charley and his kind father at home. He looked at the gun, and it flashed into his head that his foolish desire to have a gun had been the cause of his dreadful misfortune. He wished he were at home. The tears were

running down his cheeks, and he was quite pale. He kept up his doleful calling, but he was too weak to struggle any longer. Even the dog seemed to have deserted him in his extreme danger.



VI.

HUGH'S FIRST BIRD.

SOON after Mr. Marvin and Neil had gone away toward the woodcock grounds, Uncle Charley took Hugh and went to look for grouse. Hugh carried Uncle Charley's small gun, and as they walked along, watching the dogs circle about in search of the game, Uncle Charley explained the curious process by which the barrels of fine shot-guns are made. He said :

"Those beautiful waved lines and curious flower-like figures that appear on the surface of the barrels are really the lines of welding, showing that two different metals, iron and steel, are intimately blended in making the finest and strongest barrels. The process of thus welding and blending steel and iron is a very interesting one. Flat bars, or ribbons, of steel and iron are alternately arranged together and then twisted into a cable. Several of these cables are then welded together and shaped into a long flat bar which is next spirally coiled around a hollow cylinder called a mandrel, after which the edges of these spiral bars are heated and firmly welded. The spiral coil is now put upon what is called a welding mandrel, is again heated and carefully hammered into the shape of a gun-barrel. Next comes the cold hammering, by which the pores of the metal are securely closed. The last or finishing operation is to turn the barrel on a lathe to exactly its proper shape and size. By all the twistings and weldings and hammerings, the metals are so blended that the mass has somewhat the consistency and toughness of woven steel and iron. A barrel thus made is very hard to burst. But the finishing of the inside of the barrel is an operation requiring very great care and skill. What is called a cylinder-bored barrel is where the bore or hole through the barrel is made of uniform size from end to end. A choke-bore is one that is a little smaller at the muzzle end than it is at the breech end. There are various ways of 'choking' gun-barrels, but the

object of all methods is to make the gun throw its shot close together with even and regular distribution and with great force. There are several kinds of metallic combinations that gunmakers use, the principal of which are called Damascus, Bernard, and laminated (or plated) steel; the Damascus barrels are generally considered the best."

Hugh had listened very attentively to what Uncle Charley said, but he was also watching the dogs as they searched in every direction for grouse. In the midst of a slough Belt came to a stand, but Don refused to back him.

"There's a prairie-chicken, sure!" exclaimed Hugh, holding his gun ready.

"I think not," said Uncle Charley, "for Belt acts as if he does n't feel interest in what he is doing, and Don, you see, refuses to back him."

"I'll walk up, anyhow," said Hugh, "there *may* be a chicken."

"Don't be in too great a hurry; be deliberate, and, if a bird flies up, take good aim before you fire," said Uncle Charley.

Hugh proceeded very cautiously through the high grass, keeping his eyes alert and his hands ready. Uncle Charley stood watching him. Belt turned his head to one side and behaved rather sheepishly, as if ashamed of what he was doing.

Suddenly, with a sharp flapping of wings, a heavy bird arose from a tuft of water-grass and slowly flew along in a straight line away from Hugh. Here was the main chance for a good, easy shot, and the boy did not neglect his opportunity. Up went his gun, a good steady aim was taken, and then the report rang out on the air. The big bird fell almost straight down.

"Well done!" cried Uncle Charley, laughing loudly, "well done!"

But Belt refused to retrieve.

Hugh hurried to where his game had fallen, and picked it up. Uncle Charley kept on laughing.

"Why, it's a thunder-pumper!" said Hugh, holding the bird high by its long slim legs. "I was sure it was a chicken!"

"A great sportsman you are!" cried Uncle Charley, "not able to know a bittern from a grouse! Why, Belt knew better all the time!"

"Well, I hit it, all the same, anyhow," responded Hugh.

"That's nothing to boast of, I should say," remarked Uncle Charley; "do you know how many shot you let fly at that bird?"

"An ounce of number nines, I think," replied Hugh.

"But how many pellets are there in an ounce of number nine shot?" inquired Uncle Charley.

"I don't know," said Hugh.

"Well, there are five hundred and ninety-six."

"So many?"

"Yes," said Uncle Charley, "you had five hundred and ninety-six chances to hit it."

"I am sorry I killed it," said Hugh; "but I thought it was a prairie-chicken. It is a very handsome bird; is it of any value?"

"No," replied Uncle Charley; "but the Indians formerly hunted them for their mandibles, with which they used to point their arrows for killing small game. See how sharp they are! I allowed you to shoot at it in order to teach you a lesson. First, whenever you see a dog acting as Belt did, you may be sure it is not pointing a game-bird. Second, you ought to know as soon as a bird rises whether or not it is of a kind fit to kill. A true sportsman is always quick with his eyes, and never commits the mistake of shooting a thunder-pumper for a grouse!"

"How did I handle my gun?" inquired Hugh, "did I seem to know how to shoot?"

"You hurried too much. The bird hadn't gone twenty feet when you fired. You must remember to be deliberate and to keep your wits about you."

They went on, and the dogs soon pointed a small flock of grouse in a field of weeds. The birds were in excellent condition, scarcely grown, and flew slowly; but Hugh missed four before he killed one. He banged away at every wing he saw. Uncle Charley several times scolded him roundly for his careless shooting. He promised to be very cautious; but he had not fired a half-dozen more shots before he hit Belt in the ear with a pellet, making him howl at a terrible rate.

"One more heedless action," cried Uncle Charley, "and I'll take that gun from you and never allow you to touch it again! I never saw any one so awkward. You act as if you had no eyes!"

Hugh felt greatly chagrined. The tears came into his eyes as Belt ran up, with bleeding ear, to fondle about him. Of course the hurt was very slight, but Hugh's conscience told him that he had been foolishly careless after all that had been said to him. He resolved in his heart never again to allow his eagerness and enthusiasm to drive away his prudence and caution.

All the morning, as we have said, the sky had been overcast with a film of clouds. About ten o'clock it began to drizzle, and so our hunters turned toward the camp. Uncle Charley had killed a dozen chickens and Hugh had killed one. They reached the tents just as the rain began to fall heavily.

Mr. Marvin and Neil had not returned.

"I guess they're in for a good old-fashioned wetting," said Hugh.

"Are n't they coming yonder?" Uncle Charley inquired, pointing at two dark spots far out on the prairie, barely discernible through the gray, slanting lines of rain.



A bittern, or "thunder-pumper."

"I can't tell," said Hugh; "they are so far away and the air is so full of mist."

Uncle Charley showed Hugh how to clean his gun inside and how to wipe it dry outside before putting it into its case.

A good gun requires careful usage. Rust must never be allowed to appear anywhere about it, especially on the inside.

VII.

MR. MARVIN TALKS ABOUT MARKET- HUNTING.

WHEN, at last, Mr. Marvin heard Neil's cries, he hastened to the spot whence they proceeded, and perceived at once that the lad was in a dangerous predicament. Picking up Neil's gun, he fired both barrels into the air, to provide against accident, as he wished to use the gun in getting Neil out of the mire. Treading carefully, he extended the stock of the empty gun toward Neil, who clutched it with a strong grip the moment it came within



"Mr. Marvin pulled me out."

his reach. And thus the boy was drawn slowly but surely out of the mud, and at last regained his footing upon firm ground. He could not sufficiently express his thankfulness to Mr. Marvin, and declared he could not have held on much longer.

So the two dark forms, so indistinctly seen by Uncle Charley and Hugh, proved to be Mr. Marvin and Neil, though the latter looked more like a rough model in mud than like a real live boy. He was completely incrustated in the sticky, slimy muck of the marsh, which, being very black, made his face look almost ghostly pale.

"Why, what in the world is the matter, Neil?" cried Hugh, as at last he recognized him.

Neil laughed rather dolefully, glancing down over his unpleasant coat of mud-mail.

"I fell into a quagmire up yonder," he replied. "I think if I had let go I should have gone clear down to China! Mr. Marvin pulled me out."

"The boy went swimming in a loblolly of prairie mud," said Mr. Marvin; "it made him very clean, you see."

Neil was soon quite comfortable, and, when dinner was ready, he ate heartily, and enjoyed all the jokes that were made over his singular and dangerous adventure. But he could not help shuddering now and then as he thought of the desperate situation from which Mr. Marvin had snatched him at the last moment.

"I'll notice where I'm stepping when I go into another swamp, I can tell you," he said; "I'm not anxious for any more such plunges."

"You and Hugh must be two of the most careless boys in the world," said Uncle Charley. "Hugh came near shooting me and did shoot Belt, and at the same time you were trying to swim in quick-mud!"

"Oh, the boys will be all right," remarked Mr. Marvin; "they only need to watch and learn. Each mishap will teach them a lesson."

The rain continued all the rest of the day. It came steadily down in fine drops, and made the prairie look sad and dreary enough. The dogs curled themselves up under a wagon, with their noses between their feet, and slept, no doubt dreaming of grouse and woodcock.

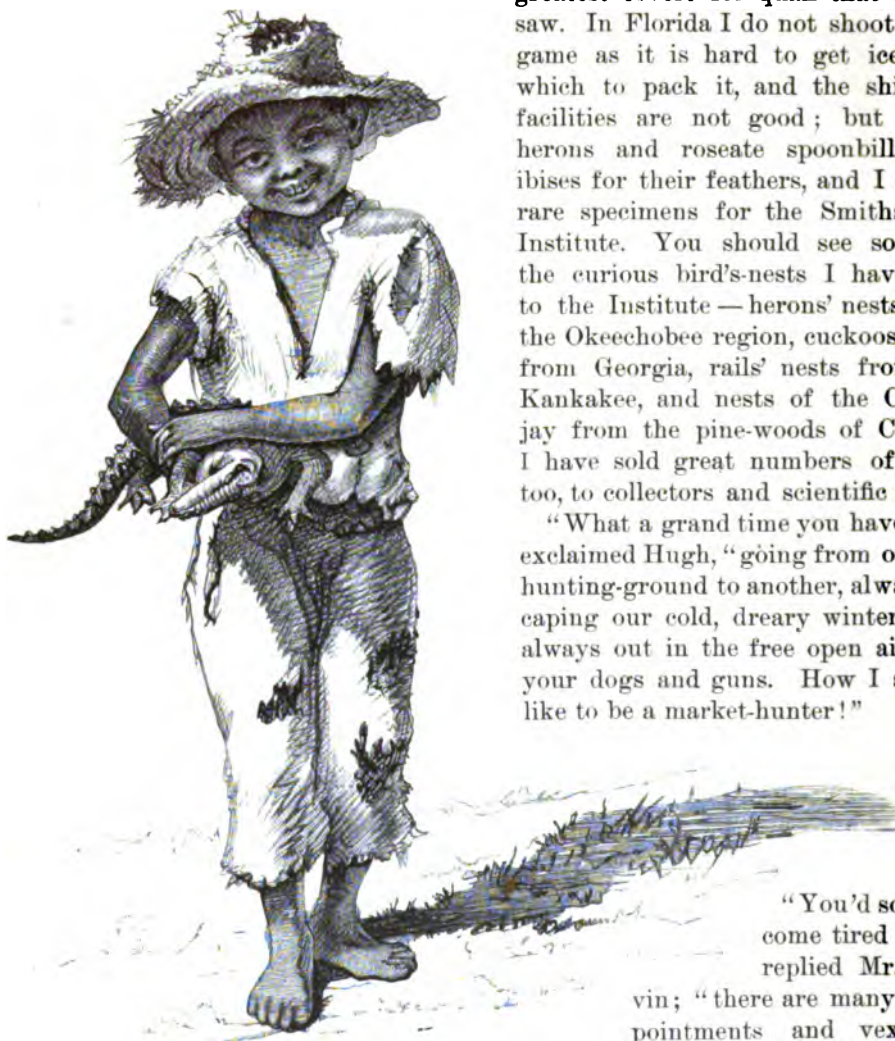
During the afternoon, the conversation turned on market-hunting, and Mr. Marvin told the boys many interesting facts about his business.

"I do not shoot much game for the general market," he said. "The most of what I kill goes to wealthy individuals with whom I have contracts. By taking great care in packing and shipping my game, I have managed to get the confidence of some rich epicures and some private clubs in the cities of Chicago, Cincinnati, and New York, and they pay me nearly double what I could get in the general market. They usually allow me twenty-five cents each for prairie-chickens, twenty cents each for quails, and forty cents each for woodcock; so you see the eight woodcock I killed this morning will gain me three dollars and twenty cents. My employers pay the express charges and often send me supplies of ammunition, so that my expenses are very light. I have made as much as fifteen dollars a day shooting geese at fifty cents each. Spring,

summer, and autumn I spend in the North and West; in winter I go south to Georgia and Florida, where I find the best of shooting. In North Georgia, for instance, there are many old plantations partly grown up in broom-sedge, the

greatest covert for quail that I ever saw. In Florida I do not shoot much game as it is hard to get ice with which to pack it, and the shipping facilities are not good; but I kill herons and roseate spoonbills and ibises for their feathers, and I collect rare specimens for the Smithsonian Institute. You should see some of the curious bird's-nests I have sent to the Institute — herons' nests from the Okeechobee region, cuckoos' nests from Georgia, rails' nests from the Kankakee, and nests of the Canada jay from the pine-woods of Canada. I have sold great numbers of eggs, too, to collectors and scientific men."

"What a grand time you have had," exclaimed Hugh, "going from one fine hunting-ground to another, always escaping our cold, dreary winters, and always out in the free open air with your dogs and guns. How I should like to be a market-hunter!"



Pickaninny and alligator.

"You'd soon become tired of it," replied Mr. Marvin; "there are many disappointments and vexatious drawbacks connected with it.

At some seasons, game of all kinds is scarce, and shooting becomes very dull work. I remember that several years ago I could hardly find chickens enough on the prairie for my own boiling. Of course, I like the business; it just suits me; but I do not advise any

boy to think of trying it. With stringent game-laws and the growing opposition to free hunting by the landlords, the time is near when a market-hunter will have a poor chance for a living."

"Mr. Marvin," said Neil, "is woodcock-shooting always surrounded by as many difficulties as we have just experienced? If it is, I shall ask to be excused from indulging in the sport hereafter."

Mr. Marvin chuckled in his droll way, and said:

"Well, Neil, a fellow does n't always have to dive into mud-sinks, as you did. I remember some fine woodcock-shooting I once had in Southern Florida. I found a little open glade, between two feeding-places, over which the birds would fly to and fro, in the evening twilight. I took my stand at a favorable point, and fired at them as they passed. At first I could not shoot well in so dim a light; but after a while I was able to fetch them down quite as easily as in midday."

"Ah, Florida; that's the place," cried Hugh, "I wonder if I shall ever get there? I've read so many delightful accounts of its fine climate, its delicious fruits, and its abundance of birds. Did you see any alligators while you were there?"

"Yes, many a one," said Mr. Marvin. "I remember during one season when I was shooting herons down in the big cypress region, that I used occasionally to go over to a cattle-man's house to get a supply of salt. This man had a family of negroes, among them a coal-black pickaninny about five years old, who took a great liking to me, and would always try to follow me away. Of course, he was not allowed to do this; but one day it seems that the little fellow, quite naked and bare-headed, managed to elude every one. When I had gone about a quarter of a mile on my way to my camp, just after I had crossed a dark little stream by means of a foot-log, I heard a child scream. I ran back as quickly as I could, for I knew that scream was one that meant something terrible. When I reached the stream I saw a huge creature moving across the path and soon made out that it was an alligator. I cocked my gun and hurried forward, but too late,—the big saurian had slid safely into the water of an ugly pond. I looked about in a bewildered way, my heart as faint as a sick man's. Everything seemed as still as death. Suddenly a well-known voice came from the lower limbs of a scrubby tree:

"'Massa Marbin, d—d—dat g—g—'gator scare m—m—me m—m—mos' to def.'"

"I looked, and there, curled up like a coon in a fork of the tree, lay the pickaninny, safe and sound. He never tried to follow me again."

"I am curious to know something more about woodcock-hunting," said Neil, whose disaster had only whetted his appetite for sport.

"I once hunted in Michigan with an Englishman, who put bells on his dogs when he went woodcock-hunting," said Mr. Marvin.

"Why?" queried Hugh.

"Well, when the dogs got into thick covert, he could trace their course by the sound of the bells, and whenever the tinkling ceased, he knew they were pointing birds."

"That was not a bad idea," said Neil.

"He was a jolly fellow, that Englishman," continued Mr. Marvin; "he liked a droll joke, even if it were against himself. He told me that one day he went out to a woodcock covert with a belled dog, and after following the sound back and forth, and around and around in the tangled growth, suddenly the tinkling ceased. Very much pleased, he went to the spot expecting to flush a bird, but he could find neither his dog nor any woodcock. Long and patiently he tramped about the spot to no purpose. Then he called his dog; it did not come. Here was a mystery. Could it be possible that his dog had fallen dead in some dense clump of the covert? He called until he was hoarse, and finally went back to camp tired and mystified. And there lay his dog at the tent door, dozing in the sun. It had lost the bell!"

"Where do you find the most profitable market-hunting?" inquired Uncle Charley.

"When the autumn flight of geese and ducks is good, I get my best shooting in the Kankakee region of Indiana and Illinois," said Mr. Marvin; "but turkey-shooting in North Georgia used to be very profitable."

"Have you never hunted large game, such as deer and bear?" queried Hugh.

"Not much; it does not pay. I don't care for anything larger than a goose or a turkey. When it comes to real sport, quail-shooting is the very best of all," replied Mr. Marvin.

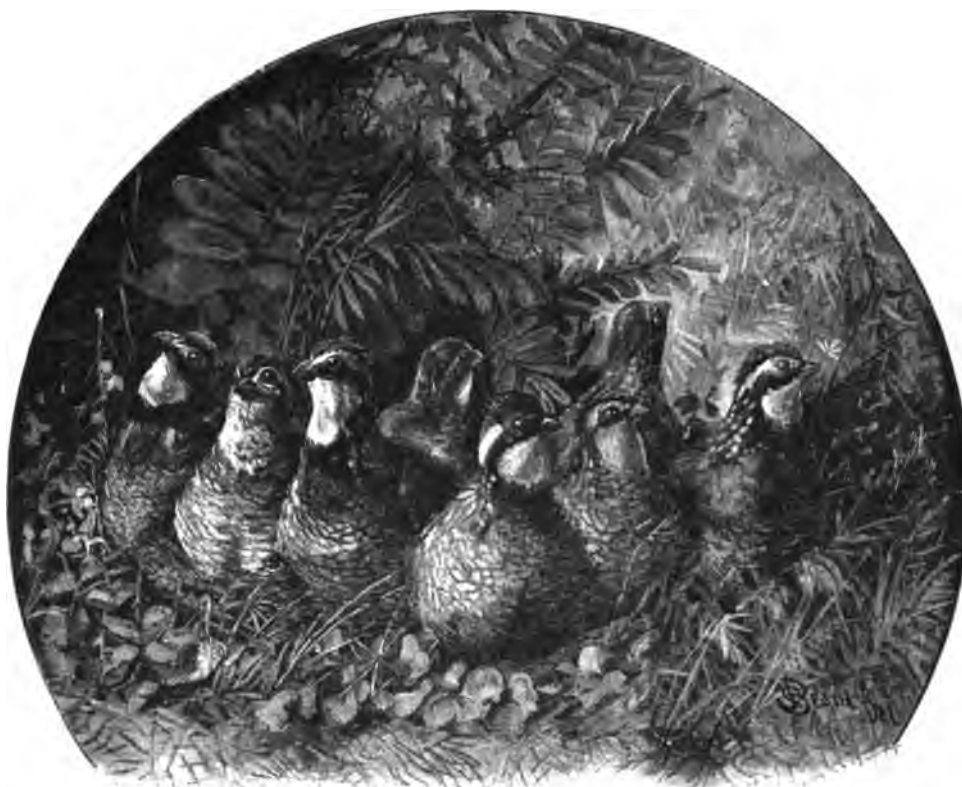
"You are right," said Uncle Charley, "the quail is the noblest game-bird in America."

"A thunder-pumper is not bad game when a fellow is keen for a shot," said Hugh, with a comical grimace. Uncle Charley laughed, remembering how Hugh looked as he stood holding up the bittern after he had shot it.

Neil and Mr. Marvin did not understand the joke, or they would have laughed too. It was not fair to Neil, perhaps, to thus keep Hugh's mistake a secret after Neil's mishap had been so fully discussed, but Hugh was the younger, and Uncle Charley favored him on that account.

When night came it was still raining steadily. Mr. Marvin remained talking with Uncle Charley and the boys until late bed-time. He told many of his strange adventures and described a number of pleasing incidents connected with his tramps by flood and field. It was especially interesting to hear him describe the habits of birds and animals as he had observed them. But Neil, whose practical and philosophic turn of mind led him to desire information that would be of general benefit, asked many questions concerning practical gunnery.

"Mr. Marvin," he said, "there is a proposition of natural philosophy laid down in my school-book which bothers me. The book states that a body, say a bullet,



A covey of quail—"the noblest game-bird in America."

for instance, when thrown upward, will fall to the earth with the same force as that with which it started. Now, if this is true, why do we never hear of any one being hit and killed by a falling bullet?"

"Your school-book is mistaken, if that is what it says," replied Mr. Marvin. "A bullet shot from a rifle directly upward will start with a force sufficient to drive it through three or four inches of hard oak wood. It will fall with scarcely force enough to dent the same wood. I have, in shooting vertically at wild pigeons flying above me, had number eight shot fall on my head and shoulders without injury to me. The difficulty with the philosophical theory is that it does not consider correctly the resistance of the atmosphere and the comparative bulk and shape of falling bodies. Now, an arrow with a heavy point will come much nearer falling with its initial velocity than will a round bullet; because the arrow, falling point downward, has all the weight of the shaft directly over the point, which makes it nearly the same as if it were a bullet of just the point's diameter, but weighing as much as the whole arrow."

"I see," said Neil; "I wish I could have studied that out myself."

"Oh, I don't like investigations and study and all that," cried Hugh; "I like fun and adventure and the pleasant, merry things of life."

"But the habit of investigation is most important," said Mr. Marvin, gravely; "it prevents accident through ignorance and mistake, and it often leads to valuable discoveries. You will never be a successful man if you refuse to study and investigate. I should not wish to trust a boy alone with a gun, if he thought of nothing but fun and frolic. He'd soon kill himself or some one else."

With these words Mr. Marvin went away to his own tent, leaving the boys to reflect upon what he had said.

VIII.

IN THE PRAIRIE WEEDS.

NEXT morning the sky was bright and clear. The wind had changed around to the north, blowing cool and sweet over the damp grass. Meadow larks were singing clearly as they swayed on the weed-tops with their yellow breasts shining like gold. Prairie-hawks sailed here and there, or, poising themselves in the air with their long, slender wings, seemed to rest above some particular spot for a time, as if studying something on the ground. Kildee plovers flew along the brook or ran about on a little marshy space hard by, piping in their noisy, peculiar way. There was the booming of the grouse and the distant lowing of cattle blending together; all nature seemed refreshed and happy. The sun soon dried the grass, and the boys were eager to be off after the game. Belt and Don sniffed the sweet air, and Snip and Sly leaped and frisked in glad anticipation of a wide, free range over the prairie.

Uncle Charley and Mr. Marvin had arranged for a hunt in a stretch of weed prairie lying about a mile and a half west of the camp. One side of this particular weed field was bordered by a luxuriant corn plantation, another side by a wheat field.

Neil and Hugh, armed with the small-bore guns belonging to Uncle Charley and Mr. Marvin, stepped proudly and briskly along, listening to the words of advice and caution which those kind gentlemen were speaking for their benefit.

"Don't be too eager," said Mr. Marvin. "Eagerness begets carelessness. Keep your wits about you."

It was a beautiful sight to see the four dogs ranging at a brisk gallop, each ambitious to scent the first bird. Snip took the prize before reaching the weedy

part of the prairie, by coming to a stanch stand on a high knoll where the grass was very short and thin. In a moment the three other dogs had backed him. "Surely there are no birds there," said Neil; "we could see them; there's nothing to hide them."

Hugh had nervously brought his gun to the position of "ready."

"Steady now, steady, Hugh; you are not to get excited," said Uncle Charley, who was by the boy's side.

"Oh, I'm all right," replied Hugh; but he was trembling. He was suffering from what is called "hunter's ague." His eagerness to get a shot had overcome his nerves.

"Don't shoot until you're certain what you're shooting at," exclaimed Mr. Marvin, loud enough for both boys to hear him, "and, above all, be careful not to hit the dogs."

The hunters moved on in a row, keeping about ten paces apart, Mr. Marvin at one end, Uncle Charley at the other, and the boys in the middle. Every dog stood as rigid as a post.

"Hold the muzzle of your gun higher," growled Mr. Marvin as Neil stumbled over an uneven place.

By this time Hugh was almost breathless with excitement. He tried desperately to control himself and behave coolly, but his nervousness constantly increased.

A few more steps, and up rose a scattered flock of birds—grouse, scarcely old enough to fly with full power, but in excellent condition for market. Uncle Charley fired right and left, bringing down two; Mr. Marvin did the same. Neil killed a bird at his second shot, but Hugh blazed away somewhat at random and did not touch a feather.

"Mark where they pitch down," exclaimed Mr. Marvin; "they're fine birds—just old enough to suit the epicures." He was a little excited too; but he was quite deliberate, nevertheless.

At last the birds, rounding a little in their course, settled into the weeds.

"Where's your game, Hugh?" said Uncle Charley, as the dogs brought in the dead grouse.

"I think I missed," murmured Hugh.

"Better luck next time," remarked Mr. Marvin, in a tone of encouragement. They all reloaded their guns and started on at a brisk pace. No one was expecting such a thing, when a strong chicken flushed right at Neil's toes. It dazed him so that he did not think of shooting; but Hugh whipped up his gun with impetuous haste and banged away with both barrels. Down came the bird, with almost half its feathers stripped off. Both loads had taken effect at not over twelve yards distance!

"Hurrah for you, Hugh!" shouted Uncle Charley. "You beat us all that time."



"I killed it, anyway," remarked Hugh.

"Shot the bird all into strings," said Mr. Marvin, "fired too soon ; that grouse can never be eaten."

"I don't care; I killed it, anyway," remarked Hugh as he picked up the riddled carcass.

"Yes," persisted Mr. Marvin, "but it's a shame to kill anything in such a way as to render it worthless. You *must* try to be more deliberate."

Hugh thought to himself that surely he could master this fault, and he firmly resolved to do it.

Presently they reached a fence that stood between them and the weed field. Mr. Marvin halted and took the shells out of his gun.

"What are you unloading for?" asked Hugh.

"I never climb over a fence with a loaded gun in my hands," said Mr. Marvin ; "a large number of the dreadful hunting accidents we hear of are caused by not observing this simple rule."

Hugh took out his shells, too, and by a side glance saw Uncle Charley and Neil do likewise.

"One of my best friends was killed by falling off a fence with a loaded gun in his hand," Mr. Marvin added. "One can never be too careful."

The weed covert into which the game had gone proved to be troublesome. The rich soil of the prairie had sent up such a tall growth that Hugh and Neil would have been lost in it, so they had to stay on the edges of the thickest part while Mr. Marvin and Uncle Charley went in with the dogs and flushed the grouse. Soon a lively firing began.

"Mark chicken!" one of the men would cry whenever a bird would rise, and then the guns would begin to roar. Bang, bang, this way; bang, bang, that way; the game whizzing up and dropping down; the dogs fetching in the dead birds and all hands eager and active.

"Be careful where you shoot!" yelled Hugh, as Uncle Charley sent a load of shot hurtling through the weeds quite close to the excited lad.

The boys banged away at every bird that came near them. Neil was beginning to show some skill, fetching down his game quite often and in good style; but Hugh could not be patient and painstaking enough.

The birds that escaped the guns went over into the wheat-stubble, and, scattering widely, offered a chance for some good sport. Hugh took Snip and went to where he had marked down three of them. The dog soon pointed one in a place where, owing to some thick weeds, the wheat had been left uncut. Hugh stopped for a minute to try to steady himself, and then went slowly on, glancing rapidly in every direction, for he did not know just at what point the game would rise. Now, a good sportsman never allows his eyes to wander at such a time, but keeps them fixed steadily to the front; in that way he can see a bird rise anywhere within the space covered by even the dimmest part of his vision. Then, too, he trusts to his ears to warn him of the first flutter of a wing in the covert. It is not strange, however, that Hugh showed signs of excitement. Some of the greatest and bravest men that ever lived have been so fond of field-sports that the sight of a bevy of quails or the sound of a pheasant's wings would arouse in them a mighty desire for a dog and a gun. But, boys, I may say just here, you will find no instance recorded in history where a dog and a gun ever made a man's life great. Like every other pastime, hunting should be a means of recreation, if not of pecuniary profit as in the case of the market-hunter.

Hugh felt his heart beating rapidly, but he kept himself fairly steady until he flushed the bird. Then his gun flew up too quickly, and he did not wait to take aim. Of course he missed, but he quickly recovered himself and did better with the left barrel, bringing down the game. Snip retrieved the bird and was fetching it in, when suddenly he stopped and pointed with the game in his mouth. This was a very rare exhibition of scenting power. Hugh flushed the bird from the stubble and weeds. It rose almost vertically and flew right over his head in the direction toward which his back was turned. The shot was a difficult one at best, but Hugh turned quickly and pulled first the right-hand

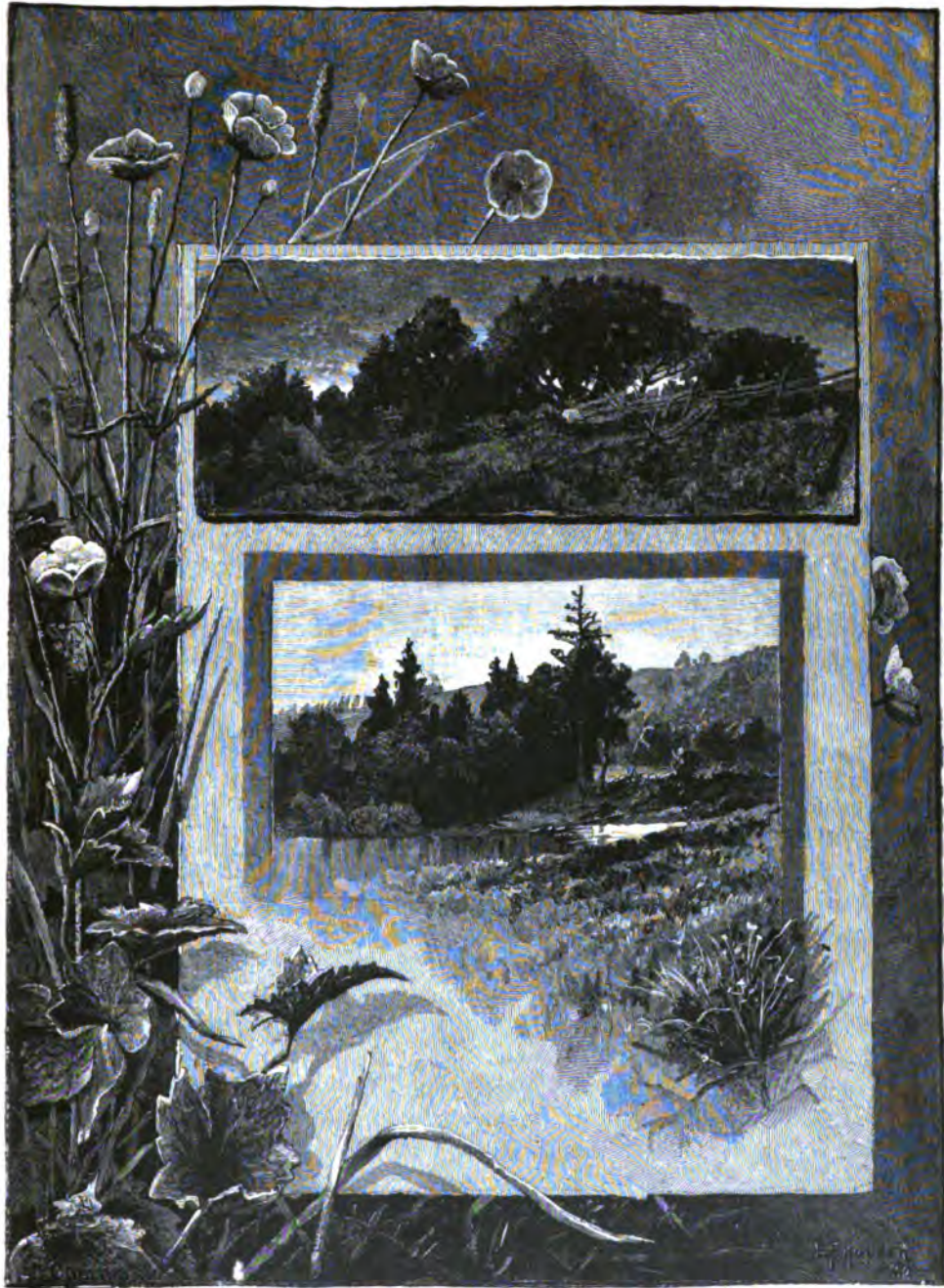
trigger, then the left-hand one. The gun failed to fire. He looked, and found that he had forgotten to reload! Snip seemed disappointed. His eyes turned inquiringly toward Hugh's face, as if to say: "That was a poor response to my splendid performance!" Hugh acknowledged to himself that here was another result of his impetuosity and carelessness.

"I shall learn something after a while, if I keep on trying," he thought, as he opened the breech of his gun and slipped in the shells.

Meantime, Neil had been having some fine luck. His coolness and carefulness excited the admiration of Uncle Charley and Mr. Marvin. In fact, he hit nearly as often as he missed, and when the shooting was over, his game-bag held seven birds.

They all returned to camp at about one o'clock. Uncle Charley invited Mr. Marvin to dine with him. While the meal lasted, the boys were entertained with an account of a cunning method of trapping singing-birds for the market.

"I met a young fellow once," said Mr. Marvin, "who was catching singing-birds for the market. Mocking-birds, cardinal-grosbeaks, orioles, and many other kinds of beautiful wild-birds were snared by him in a curious trap, which consisted of a triangular cage with a spring in the form of a wing of thread netting having a wire rim. His method of trapping was to put a live bird of the kind he wished to catch, say an orchard-oriole, in the body of the triangular cage. Then he would take the cage into an orchard or grove and hang it to a bough of a tree in a cozy, leafy place where a bird would be likely to alight and sing. He would then draw down the wings of the cage until they were spread out almost horizontally on each side, where they were held in place by a jointed drop-trigger. He would now go away to some distance, and from a secret hiding-place watch for the result. As soon as it was left alone the bird in the cage would begin to chirp and call. Then, from somewhere in the grove or orchard would come an answer; nearer and nearer would sound this new voice, and at last a gleam of gay wings and a delicate rustling of tiny feathers would mark the victim's arrival at the cage. For a time the new-comer would hop around on the boughs near the trap, twittering and peering, and finally down it would settle on the drop-trigger, to be instantly caught by the net of the drop-wing. The young man made quite a snug salary at this business; but I did not like it. There was a refinement of cruelty and treachery about the method that repelled me. Let the bright wee little fellows remain free to sing in the leafy groves and orchards, I say; for they are half the color and beauty of every wild landscape. I think there's a vast difference between a market-hunter and a song-bird-trapper."



"In leafy groves and orchards."

IX.

A NEW PROSPECT OPENS TO THE BOYS.

A FEW more days spent on the prairie in delightful tramps and instructive conversation with Mr. Marvin, and the hunt was ended. Uncle Charley declared the time up, and gave orders to have the tents struck and the wagons made ready for the return to the village.

Before separating, however, Mr. Marvin and Uncle Charley held a long consultation, the result of which was an arrangement for a winter's campaign in the finest game regions of Georgia and Florida.

Uncle Charley promised Neil and Hugh that he would try to prevail upon their father to let them go along with him.

"If he will let you go," continued Uncle Charley, "I will buy you each a good gun and a complete outfit."

Hugh fairly bounded for joy, and Neil's face grew rosy with his great delight.

They bade Mr. Marvin good-bye, with a great hope of meeting him a month or two later; and then, with their faces set toward home, they drove off across the rolling prairie. Those had been happy days, and the boys, all sunburned and ruddy with health, were now anxious to get back to their father and the young friends with whom they associated in the village. Their mother had been dead for some years; consequently, their father was much more to them than a father usually is.

The horses seemed to know that they were going home. They pricked up their ears and jogged willingly along, neighing shrilly, now and then, as they saw other horses in the distance.

At one farmer's home our friends stopped awhile to watch a windmill grind apples for cider. The apples were scarcely ripe, but the cider was sweet and very refreshing. A little bright-eyed girl brought them a pitcherful of the pure juice and a tumbler to drink it from.

"You can drink all you want to, for it is not fermented and can not intoxicate you," she said, smiling until her berry-brown cheeks were all full of dimples.

A big yellow dog came out and tried to get up a quarrel with Belt and Don, but the good-natured bird-dogs refused to be offended or show any ill-breeding.

The highway was soon reached; but the recent rain had laid the dust, so that it was pleasant to go along between the hedges in the long straight lanes, with fields of corn or grass on either hand and a cloudless sky overhead. Beautiful dusky green woods appeared in the distance, and before long they were again

in the timbered country. The bluebirds and red-headed woodpeckers and pewee fly-catchers flew ahead of them from stake to stake of the worm-fences which now bounded the lanes. Crows flew overhead cawing harshly, and the field-sparrows sang in the timothy-stubble.

The boys' hearts jumped when at last the church spires and painted roofs of the home village came in sight.

As they drove up to the front gate of their home, Mr. Burton saw them from his library window, and came limping down the carriage-way to meet them.

"Why, you are almost as black as little Hottentots!" he exclaimed, looking at their sunbrowned faces.

"But we've had a glorious time," said Hugh. "I never did enjoy anything so much. And, Papa, we wish to go home with Uncle Charley, and hunt in the South this winter, and he's going to buy us guns and everything,—are n't you, Uncle Charley?"

"I should think, from your looks, that you have had hunting enough for one season, at least," said Mr. Burton. "Have they been reasonably good boys, Charles?"

"Oh, yes," said Uncle Charley, "they have behaved in a very creditable way. I am proud of them."

Weeks passed before Neil and Hugh were tired of recounting to their young friends in Belair their many pleasing and their few thrilling adventures on the great prairie.

Neil fully believed that they would go South with Uncle Charley and Mr. Marvin, and, with his usual foresight and philosophical prudence, sent for a book on wing-shooting, and fell to studying it carefully. He also renewed his readings in natural history. But Hugh was so full of fun and so restless, that he avoided any close application to study.

"I am resolved," said Neil, "to know all I can about the haunts and habits of game, as well as about the best methods of hunting and shooting. Whatever is worth knowing and doing is worth knowing and doing well."

He also took an old blunderbuss out of the garret, and, although it had no lock, he used it to practice aiming. This exercise accustomed his hands, arms, and eyes to work in concert, a thing of prime importance in wing-shooting.

Uncle Charley observed Neil's close application to the study of the matter in hand, but he said nothing. He knew that it meant success. He had arranged with Mr. Burton for the boys to go South with him, and had sent for their guns, which were to be made to order. He had also agreed to pay Mr. Marvin a sum of money sufficient to compensate him for the loss of the autumn shooting on the Kankakee, in order that he might go South early enough to make everything ready for a whole winter in the field.

Mr. Marvin came to Belair on the same day that the boys' new guns arrived by express from New York. The guns were indeed beauties, just alike,



Getting ready for a winter in the field.

weighing six and a half pounds each, sixteen-bore, Damascus barrels, with low hammers and pistol-grip stocks; in fact, the very finest little guns that the manufacturers could make.

"You're patriotic boys," said Mr. Marvin, after examining the weapons; "you go in for American guns, do you?"

"I think our American work is quite equal to that of the English now," said Uncle Charley, "and these guns are recommended as very close, hard shooters."

"So they are, and cheap. An English gun of their grade would have cost at least three hundred dollars."

"Are n't they beauties, though?" cried Hugh, dancing around with his gun in his hand. "I'm going to name mine 'Falcon,' because it will be such a bird-destroyer! What shall you name yours, Neil?"

"Mine shall be anonymous," said Neil, "but it will do good work, all the same!"

"When shall we start to go South, Uncle Charley?" queried the always impatient Hugh.

"Some time next week, perhaps," was the reply; "are you in a hurry?"

"Yes, indeed!" exclaimed Hugh, "I want to be off just as soon as possible!"

"The first thing to do is to target those new guns," said Mr. Marvin.

"What is targeting a gun?" inquired Hugh.

"I'll show you," said Mr. Marvin. He took some white sheets of printer's paper, large enough to hold a circle thirty inches in diameter drawn with a pencil. In the center of the circle he made a small black spot.

"Now," said he, "we shall see what kind of pattern the guns will make. If they are good or bad, we shall soon know it."

They took a dozen or so of these paper targets and went beyond the town limits, where they placed them one at a time against the side of an old disused barn. Each barrel of the two guns was fired at a separate target, at the distance of forty yards, with shells loaded with three drams of powder and one ounce of number eight shot.

"These are most excellent guns," was Mr. Marvin's decision, after giving them a careful test. "See how evenly and how closely together they distribute their shot with the left barrels, and how nicely the right barrels scatter the shot a little wider. Yes, young gentlemen, you have first-class guns."

"But why are the right barrels made to scatter wider?" inquired Hugh.

"Because you shoot that barrel first and usually at short range, while you keep your left barrel for the second shot, which is nearly always at long range," replied Mr. Marvin.

Neil had found this out long ago from his reading.

All the boys in Belair soon discovered that Neil and Hugh had fine guns, and this fact was the subject of lively conversation among them. And when the news of the proposed Southern trip leaked out our young friends were the heroes of the village.

Neil and Hugh had to answer hundreds of questions, and tell their plans over and over again to their less fortunate playmates.

And so at length the eagerly expected time arrived.





X.

AWAY TO THE SOUTH!

WHEN the time came for the departure for the South, and everything had been packed and sent to the railway station, Mr. Burton gave his boys over into the care of Uncle Charley and Mr. Marvin. His last words to Neil and Hugh were:

"Be good boys; and do be careful how you handle your guns."

Quite a number of the playmates and school-fellows of Neil and Hugh gathered at the station to see them off. The boys promised to send them specimens of birds, alligators' teeth, and other trophies of their prowess.

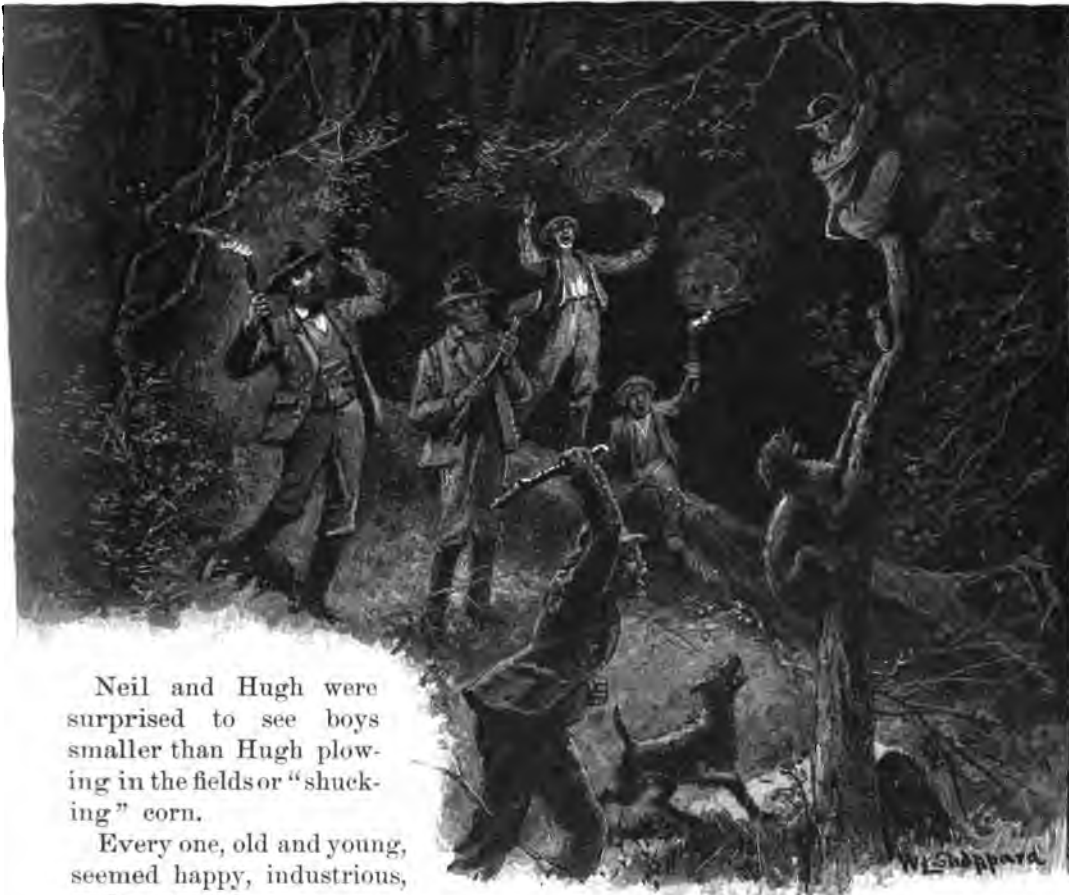
"Good-bye, Neil," cried George Roberts, just as the engine whistled to start; "think of me every time you bang away at anything; try and get enough fun for both of us."

"All right," replied Neil, and then the train began to move.

All the boys took off their hats and cheered lustily.

Neil and Hugh waved their handkerchiefs as long as they could see the station.

They had seats in a palace sleeping-car which would go through to Nashville, Tennessee. This gave them a fine opportunity to see the country through which



Neil and Hugh were surprised to see boys smaller than Hugh plowing in the fields or "shucking" corn.

Every one, old and young, seemed happy, industrious, and contented.

The fight with the wild cat.

Most of the houses were built of split logs, with no chinking in the cracks, and covered with clapboards. The chimneys were made of sticks of wood built up pen-fashion and covered with mud or clay.

In fact, everything, even to the trees and the wild flowers, was strange and interesting, especially to Neil. The people were exceedingly kind and hospitable, giving the hunters all the aid in their power.

And so their first quail-hunt promised to be all that they could desire.

XIV.

AMONG THE QUAILS.

MR. MARVIN called Neil and Hugh to him and said that he had some directions and instructions to give them.

"We are about to begin quail-shooting," he said, "and I think we are going to have rare sport. The game is abundant, the weather fine, and the covert very favorable for fair shooting. Now, you will find that so soon as the quails commence to rise you will begin to grow excited. All I ask of you is that you will promise to be careful with your guns. There is danger of your being so eager to shoot every bird that is flushed that you will not stop to think where your shot may go. You must always remember that the new and improved guns which your uncle gave you shoot very hard and far, and that great sorrow and distress might be caused by the slightest carelessness or mishap. Besides, the habit of coolness and caution, if acquired in your boyhood, will prove of the greatest value to you throughout your lives. There is an old adage which says: 'Look before you leap.' A good maxim for the hunter is: 'Look before you shoot.' Not only look at the game, but look beyond it, and be sure that your shot will hit nothing but the object of your aim.

"Now, shooting over fenced farms is quite different from shooting on the open prairie. While hunting here in this valley, you will be constantly climbing over fences. You must remember that you are positively forbidden to climb a fence with a load in your gun. It is but the work of a moment to open the breech and take out the shells. So much by way of caution, for the sake of safety. Now, a word or two about the best practice in quail-shooting. This game when flushed rises with a suddenness and force that are quite trying to the eyes and nerves of young shooters. The sound made by the wings of the bird adds to the startling effect. This is apt to throw you off your guard and render you somewhat confused and uncertain of hand and vision. The quail's flight is very swift, and you must shoot quickly; but you must also shoot deliberately. Be sure that you fire your right-hand barrel first, as it scatters the shot wider, and reserve your left-hand barrel for the longer range, especially if you wish to make a double wing-shot.

"In flushing quail, the bird will sometimes rise at your very feet, so to speak, and then there is danger that you will be in too much haste to fire. The best way to prevent random shooting, in such a case, is to wait till your vision has adjusted itself; that is, until you clearly see the direction of the bird's flight.

When once you have command of your vision, and have acquired the power of centering it on the flying game, you will be able to cover your point of aim with your gun without any hesitancy.

"When your dog has pointed game, do not rush suddenly forward to flush it. Consider a moment, and look about the landscape to see if any person or animal is visible. Next consider in what direction the game is likely to fly. If any thick covert is near, it is quite safe to presume that the bird will go in that direction. Now step slowly and firmly forward, holding your gun in front of you with the muzzle pointing upward and away from you.

"The bird will rise in a steep incline to the height of, perhaps, ten or fifteen feet, and there steady itself for a strong, straight flight. If you can get your aim—or cover your bird—at about the time it begins to fly level, you will find your shot most satisfactory.

"In raising your gun to your shoulder to take aim, be careful not to have it catch or hang in any part of your clothing. Lift it with a swift but deliberate motion, and set the butt firmly in the hollow of your right shoulder, with your right forefinger barely touching the front trigger. Don't dodge or wink when you fire; keep every muscle and nerve perfectly steady. If you fire but one barrel, immediately open your gun and reload that barrel. Then send your dog to bring in your bird,—that is, provided you have killed one."

After this little lecture was over, they all made ready for a tramp in the adjacent fields.

The dogs were well-nigh frantic with delight on finding out that their turn for sport had come. They leaped and frisked, and barked in their excess of delight.

Neil and Hugh were almost as well pleased as the dogs, and were not slow in getting ready for the hunt. They both thought they would remember Mr. Marvin's directions, and felt quite confident of their ability to shoot well.

Samson was left to take care of the camp, and very soon the hunters were ranging over the rolling fields of that fair valley, following their enthusiastic dogs.

Quails were soon found. Neil and Hugh were together when Don, the dog set apart to their use, found a large bevy in a patch of broom sedge near the middle of about fifty acres of fallow land.

"Now, Hugh," said Neil, "let's do as Mr. Marvin said. Let's keep cool and look before we shoot. There's no one near us, and so long as we don't shoot each other or the dog we shall do no harm, even if we miss the birds."

While Neil was speaking Hugh had clutched his gun nervously, in readiness to shoot.

"Oh, I'm cool enough," said he; "come on, let's flush the birds and get to business."

"No," said Neil; "you can't hit anything while you're trembling in that way. Steady yourself, and be sure you've got your aim before you fire."

"Pshaw!" exclaimed Hugh; "I'm all right. You just be sure about yourself, and get your own aim; I'll get mine."

This was not said in an unpleasant way, for Hugh was only in a hurry and did not want to be bothered with advice. He walked forward as he spoke and



"Bob White!"

flushed the birds. They rose in a close body with a loud roar of wings. There were at least twenty of them.

Hugh quickly leveled his gun and fired at the center of the flock. Down came five birds. He forgot to fire his left-hand barrel, so pleased was he with his luck.

Neil waited till after Hugh's birds had fallen; then he singled out a quail of the scattering bevy and brought it down in fine style. Quick as thought he aimed at another and pulled the trigger of the left barrel. His last shot missed. Hugh gathered up his five birds and cast his eyes rather saucily at Neil.

"I guess," said he, "I was almost as ready for business as you were."

"You seem to be four ahead of me, to start with," Neil replied; "but the race is not won till it's done."

"All right," said Hugh, confidently, as he reloaded the empty barrel of his gun; "we'll keep count and see who beats."

The birds had scattered rather widely in some low weeds along a fence-row. Neil had "marked two down"; that is, he had noted where they settled near an old stump. He left Hugh to follow Don, and went to flush his birds himself. They rose almost together. He fired right and left; but, as before, only killed one. He heard Hugh fire twice in close succession, and at the same time Mr. Marvin and Uncle Charley began a perfect volley over in a neighboring field of corn-stalks. He followed the bird he had missed to where it had lit in a clump of blackberry briars. When it got up he missed it again with his right barrel, but quickly covered it again and killed it with his left.

"I am in too big a hurry when they rise," he thought; "I must try and overcome that fault."

Neil's knowledge of the habits of the quail gave him quite an advantage over Hugh, who had never studied such things. For instance, Neil never would have wasted an hour of his time beating around in a marshy place hunting for quail. Hugh did this, not knowing that quails prefer dry fields where small grain or weed-seeds are abundant. The loss of so much time without seeing a bird gave him little chance to compete with Neil, who, without a dog, flushed a small flock and succeeded in making several fine shots, adding six birds to his bag. Once he saw a bird flying toward him. It was coming from the direction in which Hugh was hunting, and so Neil would not shoot till it had passed him. He turned about and tried to get a good aim, but somehow he missed again.

Every young shooter will have this trouble at first. He will feel quite sure that he aims correctly, but he will fail to stop his bird. This usually arises from a bad method of directing the gun. It may be that the young hunter holds his head too high, in which case he will over-shoot; or he may fail to pull the trigger just as he fixes his aim, and thus miss by shooting too low or behind his bird. If the butt of the gun be held against the arm, instead of in the hollow of the shoulder, it may derange the aim. Nothing but careful, intelligent practice can overcome these faults.

Hugh fired eight or ten times before he added another quail to his five. It was great sport, nevertheless, and Don worked faithfully to make his young master enjoy it.

Just before they started back to camp, the boys found a large sweet-gum tree that stood alone near the middle of a field. As they approached it a sweet resinous fragrance greeted their senses — a perfume entirely unlike anything they had ever smelled before.

"That is liquid-amber," said Neil; "let's get some to chew."

A place on the tree had been hacked with an ax, and large beads of clear yellow wax or gum had formed on the chipped edges of the wound.

"What a delightful fragrance!" said Hugh; "but how do you know it is fit to chew?"

"Oh, I know" said Neil; "I've been posting myself on the natural history of this region. This gum tastes quite as delicately delicious as it smells."

They gathered some of it and found it just suited to their boyish taste. Hugh declared that nothing in the world ever was so good. They did not swallow it, but simply chewed it to get the racy essence of it.

The guns of Uncle Charley and Mr. Marvin kept up an almost incessant booming about a quarter of a mile away, while the boys were curiously examining the gum-tree. The leaves had been touched with the sharp frosts of November, but they had not yet fallen off. They had taken on brilliant colors, as the maple leaves do in the North, but their tints were even purer in carmine, scarlet, dark purple, orange, primrose, green, and brown.

The perfume and taste of liquid-amber is quite unlike anything else of the kind. There is an elusiveness about the flavor both pleasing and tantalizing. Children all like it, but they can scarcely tell why. It seems to have a suggestiveness in it, so to speak, of spicy roots and bark and buds—a mere hint of pungency and acridness, along with the sweetest and most delicate aromatic fragrance that lingers in the senses for hours.



Don points the heath-cock.

As the boys were pursuing their way further toward camp, they came to one of those shallow, bushy ravines so common in the valleys of North Georgia. Don pointed at the edge of the wild tangle of vines overgrowing the place.

"Look out, now," said Neil; "if a bevy of quail gets up here, it will call for snap-shots of the quickest kind."

His words had scarcely been uttered when whir-r-r! went up a big brown bird, making a great sound with its strong wings.

Bang! bang! went the guns of both Neil and Hugh. The bird's flight was stopped short, and down it fell not twenty yards from their feet.

"That was a draw," said Neil.

"What sort of bird is a draw?" inquired Hugh.

"Oh, I was n't speaking of the bird's name—it's a pheasant or partridge; I spoke of the shot. When two sportsmen fire at the same bird at the same instant, and it is killed, the shot is called a draw, and the bird is not counted to either of them. You ought to have it, though, for it was flushed on your side of the dog."

Don brought in the game, carrying it very proudly, as if he knew that it was quite a prize. Neil took it and held it up, spreading its wings and displaying

the beautiful shades of color. It was a full-grown cock in its second year's plumage, and the various tints of olive, brown, black, bluish white, and ash-color were as bright as the tints of wild flowers.

"This," said Neil, "is the ruffed grouse named by the naturalists *Tetrao Umbellus*, formerly called ruffed heath-cock. It has some very curious and interesting habits. In spring it makes a heavy pounding sound which resembles the notes of a drum in the distance. On dreamy, sunshiny mornings in early May this hollow noise has a strange effect when heard for the first time in the wild woods."



"The drumming-log."

Neil delivered this somewhat in the tone of one reading from a book.

"But how did you find out so much about ruffed grouse? You never saw one before, did you?" inquired Hugh.

"I have studied all about game-birds," said Neil, "I'm going to write a book on them sometime."

They hunted diligently about the ravine, but found no other grouse. In fact, this bird is often lonely in its habit, especially in the Southern States, though as far North as Michigan large flocks are found in autumn and winter.

Neil brought in eleven birds in all. Hugh had but seven.





XV.

CAMP-CHAT.

WHEN our friends reached camp, Judge had returned from the village, bringing a bundle of letters and papers.

The quails were turned over to Samson to be prepared for market, as it had been agreed that all the game killed by the party, over and above what they needed to cook, should belong to Mr. Marvin, Uncle Charley bearing all the expenses of the excursion.

When the game was counted, it was found that there were one hundred and ten birds as the day's bag.

Neil and Hugh each received a letter from their father, and Hugh had one from Tom Dale. By the time these were read, a very late dinner had been spread, and they all ate with that gusto known only to hunters, and which would not be considered very elegant in polite society. But when men and boys get out into the freedom of the woods and fields for a time, they become just a

little savage and animal-like, and are apt occasionally to break through some of the stricter rules of the parlor and dining-room.

A road ran near the camp and went winding away down the valley to the village. Along this, now and then, containing a mountaineer and his family, passed a wagon, drawn by slow-moving little oxen whose short wrinkled necks were bowed under big round yokes. The vehicles were of rough home-make, with wooden axles and vast hubs to the wheels, out of which dripped the black pine-tar used for lubricating. The white-haired children huddled together in the beds, or boxes, of these vehicles, seemed bright, healthy, and happy. They gazed at our friends with lively interest as they were slowly trundled past. Uncle Charley stopped one of the wagons to make some inquiries of the man driving it about the country, and Neil heard one little boy say to another as he pointed slyly at the tents:

"I never seed folks a-livin' in rag houses afore, did you?"

"No," said the other; "and the houses haint got no chimbleys to 'em nuther."

"Them boys looks sorter white-livered, like weemen," gravely muttered the first, taking a chew of tobacco; "I 'low they're not healthy."

Neil smiled at this idea. He knew that he was stronger than both of those mountain boys put together.

Tom Dale's letter brought a full account of all that the Belair boys had been doing since Neil and Hugh had left the village. A heavy snow had fallen, and the coasting out at Dobbins' hill had been fine, and there was good skating on Loring's mill-pond.

"Just think of it!" said Hugh; "here we sit in our shirt-sleeves, with a balmy wind blowing over us, while they are all bundled in furs and mittens and overcoats, skating on the ice or coasting in the snow. I think it's more fun to be here, don't you? A fellow can't enjoy himself rightly with a pinched nose and benumbed fingers. And then the wind off the snowy prairie is terribly cold and biting, sometimes."

"It's the change that one enjoys, I think," said Neil. "Don't you remember Gus Fontaine, who came to Belair from San Antonio, Texas, and how he was charmed with our winter sports? I never saw a boy like sleigh-riding so much; and rabbit-hunting,—why, he said he wanted to go rabbit-hunting every day! He seemed never to get cold, and the keener the wind blew, and the more the frost-crystals flew, the better he liked the weather."

"Oh, well," said Hugh, "Gus was a queer boy, anyhow. Do you remember he astonished us the first time he rode one of papa's young horses around the lot without any bridle or saddle, and gave us what he called the Comanche war-whoop? He could ride almost any horse, in that way, and if he fell off, it never seemed to hurt him a bit."

"Well, he'd learned all that on the Texas plains," said Neil. "It all depends upon where you live. Now, there was Ted Brown, from Addison Point, Maine,

who came to see us last summer, just think how he used to talk about the starboard and larboard side of the table at dinner, and how he used to yarn about what storms he had been in on his father's fishing-smack, and about



"He wanted to go rabbit-hunting every day."

seeing sea-serpents, and whales, and sea-lions, and all that sort of thing. But he enjoyed being with us on the farm; all boys enjoy a change of climate and scenery."

Mr. Marvin was well pleased with the result of the day's shooting. The birds would bring several dollars, he said.

"Well," remarked Hugh, "I think I shall be a market-hunter. It's just as good as being a lawyer, or merchant, or physician, or preacher."

"You are mistaken, my boy," said Mr. Marvin,

gravely. "I know what I am saying when I tell you that you must not think of throwing away your life on so precarious and toilsome a business. Even as recreation from the effects of overlabor, hunting has its drawbacks; but after you have followed it through wind and rain and sleet and storm for years, it becomes immensely irksome as a regular business. Then, too, a fellow soon begins to feel that he has thrown away his life. When I was a young man I graduated from a good college, and I might have made something of myself if I had n't caught the naturalist's fever; but I took to the woods and the fields and became a homeless, wandering bird-shooter. Of course, I'm too old to change now; but I never wish to hear you speak again of following my mode of living. No, no; you and Neil have a higher aim. You must make your lives great and useful."

"Well," said Hugh, "if I do not become a market-hunter, I shall be a farmer, I think, like Uncle Charley, and own cattle, and sheep, and hogs, and horses, and broad fields of corn, and beautiful green pastures."

Night had now come on. They all went to bed early, Hugh and Judge among the first, for they had secretly agreed to get up before daylight and go off to hunt some hares by moonlight, in a little glade not far from camp. This glade was

in the midst of a dense pine wood, and Judge avowed that hares always met in a glade to dance on moonlight nights. But they had their trouble for nothing. Not a hare did they see. The morning was a lovely one, however, and the still, beautiful valley lay as if asleep in the soft moonshine. They watched the glade for an hour or more, and returned to camp just as Samson had lighted a fire for breakfast.

"Wha' I tell ye?" said the old man, "did n't ye *know* dat de rabbit not gwine pat an' dance on Friday night! Rabbit all go to ribber Friday night to wash der clo's."

It was a good breakfast that Samson was making. Some eggs procured at a farm-house were beaten into a light foam for an omelette, and some bread, toasting before the fire, was to be buttered to receive the broiled quail. Coffee was boiling, and some sweet-potatoes, sliced very thin, were frying in a pan of lard, to be taken out presently and wiped with a clean towel and put on a plate and eaten while crisp and hot. A pot of cranberry jelly and some blackberry jam would serve as helps, whilst some hot waffles and honey with milk were to close the meal.

Neil was up and was writing in his diary, and Mr. Marvin was cleaning one of his guns. He showed Hugh all the mechanism of the locks and breech-fastening, and explained to him how each piece was made to exactly fill its place, but with such economy as to take up the least possible space.

"I should not have advised your father to allow you to have a gun, if there had been no breech-loaders," said he; "for I consider a muzzle-loading gun too dangerous for a boy to handle. The beautiful construction of a breech-loader renders it entirely unnecessary for the shooter ever to turn the muzzle toward himself, and the rebounding locks with which it is furnished prevent accident from any chance blow the hammers may receive. No boy ought ever to have a gun that has not rebounding locks."

"Guess dis ole gun o' mine got 'bout as good locks as any," said Judge, fingering the priming-pan of his clumsy flint-lock and grinning in his inimitably droll way.

The sun soon came up over the range of blue hills east of the valley, and the cardinal-grosbeaks began to call from tree to tree down by the rivulet. It was like a May morning in the North, only the air was more balmy, and a resinous fragrance seemed to fill all space—it was the smell of the turpentine of the pines and the odor of the liquid-amber.

Neil and Hugh went down to the edge of the rivulet and washed their hands and faces, and neatly combed their hair.

"Bre'kfus' ready! Come to bre'kfus'!" called Samson.

Every one was as ready as the breakfast, and very soon they were enjoying the plenteous and healthful feast.

XVI.

NEIL SHOTS BIG GAME.

THE fortnight spent by our friends in the North Georgia valley was one long to be remembered by them, especially by Neil and Hugh.

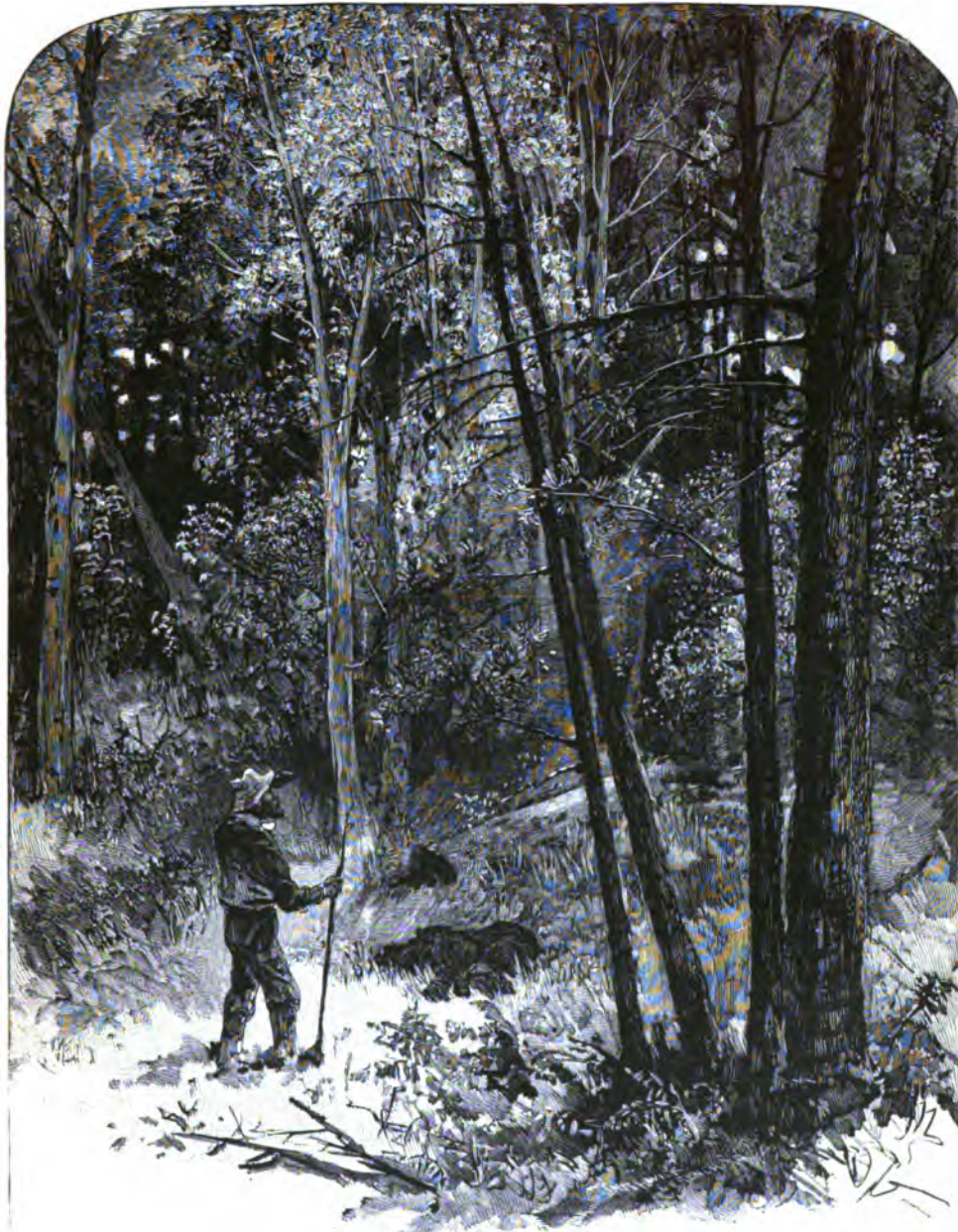
Mr. Marvin took great pains to train the boys in all the tricks and turns of quail-shooting, and at the same time he made plain to them the hidden dangers that lurk in the path of the young hunter. He very much desired that no accident should befall his young friends, and he well knew that it required constant vigilance to prevent the possibility of any calamity from their fervor and excitableness. Neil seemed quite prudent and cautious, but Hugh, being younger and of a more sanguine and impulsive nature, was constantly doing something that threatened danger to himself or to some one else. Not that he meant to be careless or unmindful of the safety of those about him, but he seemed to forget everything else and entirely lose himself for the time in whatever chanced to be uppermost in his mind. It was impossible for him to keep steady and cool, as Neil could. What he did was always done without the slightest forethought, and "with a rush and a bang," as Mr. Marvin said, one day.

Old Samson, who heard the remark, expressed his estimate of Hugh's temperament by replying: "Dat's so, Mahs' Marvin. Ef Mahs' Hugh 'u'd happen to tink ob it, he'd jump inter de fire afore he could stop hisse'f!"

Mr. Marvin and Uncle Charley chided Hugh very often about his reckless and heedless ways, and he honestly and earnestly tried to be more sober and careful. He improved quite rapidly in his shooting, though it was plain that he never would be able to compete with Neil, who was beginning to be a fine wing-shot at both single and double birds. It may be well to explain just here that by "double birds" is meant, in the sportsman's parlance, two birds at which the shooter fires right and left. If he kills both birds one after the other, the hunter calls it a double shot, or "killing a double."

Neil had studied faithfully, and had used every endeavor to conquer all his faults in shooting. He had written down in his diary such of the rules of shooting as had been given to him by Mr. Marvin and Uncle Charley. He had learned these rules by heart and had practiced them assiduously.

On the contrary, Hugh jumped to all his conclusions. He forgot every rule as soon as he saw a bird, and depended entirely upon sudden impulse to direct his action.



"Come to bre'kfus'!" called Samson.

In a future chapter I shall record all of Mr. Marvin's rules of shooting, in simple and direct language, and every young hunter will find them of value to him.

Let us now, however, witness the last quail-shooting of our friends in the Georgia valley.

A slight drizzling rain had fallen all through the night, but the sun came up clear and strong, and the air was all the sweeter from the dampness that hung on the woods and fields. The distant mountain knobs and peaks were as blue as indigo; the fields of corn-stalks shone like gold.

"Now for our farewell hunt," said Uncle Charley, as he loosed his dogs and took his fine gun from its cover.

Neil looked out over the valley and wished that he could paint well enough to sketch the scene in colors just as it then appeared. He found this ambition to be an artist growing upon him. He was all the time studying objects and landscapes with a view to their picturesque effect or pictorial values. He carried about with him a small manual on free-hand sketching from nature, which he had almost worn out by constant studying. But he was also a close observer of all that went on around him, whether among the plants and trees, the birds, or the people of the region. The memoranda in his note-book were as various as the phases of nature; and while an artist might have laughed at his sketches, they were, after all, not so bad.

Quails were easily found that day. Our friends had not been out half an hour before their guns began to boom in every direction. Hugh, as usual, was excited and carried away with the thrilling sport, and banged away at every feather that stirred. He seemed to act on the principle that as the game was plentiful it did not matter how often he missed, and that if only he kept up his firing, some of his shot would be sure to hit.

A very large bevy of quails was found in a field of what the North Georgia farmers call "crab-grass," which was about knee-high and very thick. The birds were scattered and began to rise one at a time. Neil, Hugh, and Judge were near each other. The first shot fell to Hugh, who knocked over his bird in fine style, handling his gun like an old sportsman. Judge's turn came next, and it made the others laugh to hear the funny "click-floo-bang" of his rickety old flint-lock. The "click" was when the flint struck the face of the steel, the "floo" was the flash of the priming on the pan, and the "bang" was the gun's report. Each sound was separate and distinct. But Judge brought down his quail, all the same. Neil tried for a double, and (a record not usual with him) missed with both barrels.

The game was now rising at almost every step and the shooting became fast and furious. Judge was not having a fair chance, for, of course, his gun being single-barreled and muzzle-loading, he had to stop and go through the tedious process of loading every time he fired; whereas Hugh and Neil had nothing to

do but press a spring, open the breech, and slip in the shells ready loaded and capped. But it was astonishing to see how rapidly the young negro got powder, wads, and shot down that dingy old barrel, and how nimbly he glided about in search of birds.

Neil seemed in bad luck somehow, his birds always presenting difficult shots,



A happy quail family.

and he missed quite often. This discouraged him not a little, and whenever a shooter loses self-reliance, his chance for any brilliant display of marksmanship is entirely gone.

Hugh was in the highest state of exhilaration. He was successful with almost every shot, and his self-confidence was perfect. Two or three times he had sent his shot dangerously near Neil or Judge in the hurry and activity of his exercise. He had killed more game than Neil, and the latter was strenuously endeavoring to retrieve his lost luck.

They had now driven the scattered remnant of the bevy of quails across the field to a fence-row grown up with sassafras bushes and persimmon

saplings. Hugh was on one side of this fence and Neil and Judge were on the other side.

The birds had become quite wild, so that they were rising at longer range than usual, and whirring away with all the speed their wings could give. Neil killed two or three in fine style, and began to regain his nerve. At length, two rose together, one going up the fence to his left, the other going down the fence to his right. He killed the first with a shot from his right barrel, and turning quickly, covered the other and fired his left. As he pressed the trigger for his second shot, he saw too late that Judge was nearly in line. He tried to stop, but the gun would fire. Boom!

"Oh, massy! Goodness! Oh, I's killed!"



"Oh, Massy! Oh, I's killed!"

I's killed! Oo! Ohee! Oh, me! Oh, me!" and Judge fell upon the ground and began to roll over and over. His wild screams could be heard at a long distance from the spot.

Mr. Marvin and Uncle Charley heard him, and ran with all their might, reaching the place quite out of breath and greatly frightened.

"What in the world is the matter?" exclaimed Uncle Charley, in a half-stifled voice.

Neil and Hugh were bending over Judge, who was still rolling over and over in an agony of fright.

Mr. Marvin pushed the boys aside and began to examine the wounded negro.

"This is more of your miserable work, Hugh," said Uncle Charley, turning his agitated face toward his younger nephew. "I've been afraid of something of the kind; you're so heedless and wild, you ——"

"It was n't Hugh," quickly exclaimed Neil; "I did it!"

"You, Neil? You?" That was all Uncle Charley could say. He stood stupefied with amazement. The idea that Neil could have acted so recklessly seemed too strange to be true.

Meantime, Mr. Marvin had stripped off some of Judge's clothes and was examining the wounds more carefully to see if any help would be needed. He was relieved to find no very dangerous wounds. But Judge continued his screaming, loudly declaring that he was already dead.

Neil and Hugh stood mournfully looking on, their hearts heavy with dread.

It was with much difficulty that Mr. Marvin and Uncle Charley kept Judge still enough for a bandage, made of a handkerchief, to be put around his arm where the wound that was bleeding most freely was located.

"Oh, what shall I do, what shall I do!" cried Neil, wringing his hands and gazing blankly at Hugh.

"You did n't mean to do it," said Hugh, in a voice meant to be consoling; but his whitened face and purple lips told how intensely excited he was.

"Oh, I'll die, I'll die! I want ter see mammy — take me to mammy!" bawled Judge.

"He's going to — to — die!" Neil huskily murmured, in an agony of apprehension, and leaning on his empty gun for support.

Hugh was leaning on his gun also.

Uncle Charley looked up, and exclaimed inquiringly:

"Boys, are those guns loaded?"

"Mine is," said Hugh, quickly lifting it and slipping out the shells. Both hammers were cocked and both barrels loaded!

Then it was that, for the first time in their lives, the boys saw good, kind-hearted Uncle Charley lose his temper. His face grew very red.

"You boys must be little better than idiots!" he cried, looking almost furiously back and forth from one to the other. "You are resolved, it seems, to kill yourselves and everybody else!"

Then he turned upon Judge, who was still screaming and tumbling around, and rapping him on the shoulder, said sharply:

"Now, Judge, be quiet, instantly!"

Judge ceased his cries at once and became perfectly quiet. Mr. Marvin was seen to smile grimly in the midst of his surgical work. When the bandage had been well adjusted and Judge's body carefully examined, Uncle Charley said:

"Get up, now, and put on your coat."

"I—I did n' want ter be killed, nohow," sobbed Judge, as he scrambled to his feet.

By great good fortune, his hurts were not serious. Five of the shot had struck him—two in the left arm, one in the shoulder, one in the neck, and one in the breast. These had been mere scattering pellets on the outer rim of Neil's load, as Judge had not been directly in range.

It was a relief to all concerned when the true state of the wounds became known; but Neil and Hugh hung their heads and pondered deeply. The lesson of so grave an accident was impressing itself upon their minds. How terrible it would have been if Judge had been killed!

XVII.

NEIL GOES INTO A DEN.

JUDGE was a very sore boy for several days, and had to take good care of himself, in order to prevent his wounds from inflaming and making him sick. This delayed the departure from the valley for nearly a week.



The turkey.

In the meantime, a disagreeable wind and rain came on, making it very uncomfortable to be out-of-doors. Neil brooded over his mishap a great deal. He felt as if he had been guilty of a great crime. He had been so sure of his own ability to avoid all accidents that it made his signal mistake doubly inexcusable to himself. Hugh was gloomy, too, so that, from the sad weather and a lack of cheerful conversation, the camp was a stupid place for a while.

But when the clouds blew away at last, and the sun filled the valley with golden light, Uncle Charley gave orders to strike the tents and make ready for moving. Judge declared that "de soreness mos' all gone out o' dem shot-holes," and everybody grew lighter-hearted with the brightening of the weather.

Nothing of any especial interest happened on their way back to Uncle Charley's farm in Tennessee, until they had reached a deep hollow on the northern slope of the mountain, where they saw a fine flock of wild turkeys run into a thick wood

some two or three hundred yards ahead of them. This reminded them that the next day would be Thanksgiving Day, and a roast turkey would be just the thing for their Thanksgiving dinner.

Samson and Judge were left to drive the wagons, while the rest turned out with their guns to give chase to the game.

Neil and Hugh were very eager to add turkeys to their list of game. Mr. Marvin saw their haste and stopped them to speak a few sharp words of warning and advice. Neil's face flushed, and he promptly said :

" You can rely on me, Mr. Marvin ; I shall never be careless again."

Hugh promised, also, and they all went rapidly and noiselessly into the wood.

The boys, who were walking side by side, chanced to come upon the flock at the head of a short, deep ravine, from which issued a clear, cold mountain spring. The birds were fifty yards away, giving but a poor opportunity for a successful shot ; but each of the boys fired right and left, and one big " gobbler " fell, tumbling to the very bottom of the ravine, where they heard him splash the water of the spring stream.

Neil and Hugh ran to secure their game, but on reaching the edge of the ravine they found its sides so steep that descent into it seemed impossible. They could look down and see the big black bird lying on its back in the shallow stream.

Some small trees grew in the rough soil on the jaws of the ravine ; below them there was an almost vertical fall of damp and dripping rock for a distance of nearly thirty feet.

Neil began to look around for some means of descent. He could not bear the idea of leaving such noble game lying where it fell. A little distance from where they stood there was a place where a huge piece of the rocky bluff had dropped out many years ago. This had formed a sort of projection some fifteen feet below the verge of the precipice, and out of it grew a gnarled cedar-tree, whose top came above the plateau upon which the boys were standing.

Neil handed his gun to Hugh, and seizing a limb of the cedar-tree, swung himself to its body, and then climbed down to the projection. This was quite easy, but he found himself still twelve or fifteen feet above the bottom of the dusky and chilly ravine. From this point however, the descent of the rocky side was somewhat slanting, and so he easily slid down without accident. The air was damp and of disagreeable odor, and Neil hurried to get the turkey, which he found to be a very large one, weighing, he thought, nearly twenty pounds. He picked it up, and started to climb out. Now, with a sudden sinking of the heart, he discovered that he could not go up that steep incline, down which he had slipped with so little difficulty. He could not make a single step upward on the damp, slippery surface of the slanting stone. He let the turkey fall and called to Hugh. No answer came. This frightened him. Could it be that his brother had gone away ? He called again as loudly as he could. Not

a sound came back in response. Somewhere, far away, as it seemed to him, he heard the report of a gun. He ran along the spring stream a short distance to see if there was any available outlet to the ravine, but the water soon lost itself by flowing into a fissure of a stone wall which some convulsion of nature long ago had thrown across the way.

Here was a situation that would have daunted a stronger heart than Neil's; but, much to his credit, the boy kept quite calm. He at once felt that his escape depended on the practical application of his common sense. If he should give way to fright, he could not hope to get out. He searched in every direction for a tree that he could use for a ladder, but there was none.

"Surely," thought he, "there must be some way out."

As he was walking along near the wall of one side of the gulch, his eyes chanced to fall upon the track of a large animal's foot in the soft clay. Neil knew in a moment that it was a bear-track. It was larger than his hand and looked as if it had been made quite recently. The animal had been walking along close to the base of the cliff, and there were two or three places where it had dug the dirt out of the crevices in the rock, as if hunting for food or a good spot for a lair. But Neil was much more interested in getting out of that gloomy place than he was in studying bear-tracks. He hallooed to Hugh again and again without getting any answer. Suddenly the thought came to him that Hugh had run after Uncle Charley and Mr. Marvin to get them to come and help him out.

"Of course that's it," he thought; and then he grew very much calmer. It could not be long before they would come to look for him, in any event. He would have felt much better if he only had his gun, but he tried to make the best of his situation by a careful search for some means of getting out without waiting to be helped by Uncle Charley and Mr. Marvin. It annoyed him to think that here was another ugly result of his want of prudence, after all that had happened and after all his good resolves. As he wandered around, climbing over fragments of stone and through tangles of scrubby cedars, he found a sort of zigzag slender path, that appeared to lead right out of the ravine. His heart grew light in a moment.

He started up the path, but remembering his turkey, he went back and picked it up. The ascent was very difficult, but Neil was a good climber, and his desire to make his way out without help whetted his energy. He crawled rather than walked up the angular path, dragging the turkey after him. Some distance from the bottom of the ravine, at a point where the path crossed a sandy ledge, Neil saw the bear's foot-prints again, but this time they pointed in the direction in which he was going.

"Ah," thought he, "this is Bruin's path. No doubt he came down into the gulch for water. If only I had Samson's dog to start on the track! He would soon find the old fellow's den."

A little farther up he came to a place where a pine-tree had tumbled into the ravine and lodged against a wild mass of stones directly across the path. At first it seemed impossible to get past this obstruction; but he soon saw where the path led under the log and over the stones. With great difficulty he crawled along, creeping under and over and around, as the tracks led. If it had not been for the turkey, his progress would have been more rapid. The heavy bird tired his arm, and the exertion of dragging it put him out of breath.



He was resolved not to leave it, however, no matter how much trouble it cost him. He climbed to the top of a loose pile of stones over which a wild vine had grown, and was on the point of descending on the other side, when a fragment of stone gave way under him, and he fell among the vines. At the same time a hollow, hoarse snort or growl reached his ears, and even before he could scramble to his feet he saw, with consternation, a huge black animal sitting upon its haunches under a shelf of rock not twenty feet away from him.

"He saw a huge black animal."

It was a bear, and it was eying him savagely. To have stumbled upon a bear in that lonely ravine, and without his gun, was not a cheering experience to the young hunter, who did not waste any time examining old Bruin's premises. He only saw that the place was quite a comfortable den, and that Mr. Bruin sat there with half-open eyes and snarling mouth, as if greatly vexed at having been aroused from a quiet nap. And as the bear effectually barred his further progress, Neil ran back along the path he had been following, and at last climbed a tree to wait until help should come to him.

He had let go of his turkey when he fell over the stones, and he had not taken the trouble to pick it up again, especially as it had tumbled down near to the bear's feet,—nearer than Neil cared to go.

XVIII.

NEIL AND HIS BEAR.



WHEN Neil handed his gun to Hugh and started down into the ravine, Hugh saw a fox-squirrel some distance away. Now a fox-squirrel was an animal which Neil and he had been trying very hard to get as a specimen for their father's cabinet at home. But, as yet, they had failed. He placed Neil's gun against a tree and went on a long, rambling chase after the little brown-bodied, black-headed, white-nosed animal whose great bushy tail kept waving in the distance ahead of him. He soon forgot Neil and the turkey, and thought of nothing but of how he should manage to get a shot at the squirrel. After a vigorous and roundabout run through the woods, he at length saw his game run up a low, gnarled oak-tree that grew on a dry, stony ridge.

"Now," thought Hugh, "I shall get him at last!"

But to his chagrin, the next moment, with a guttural quack, the squirrel dived into a hole in a big knot about thirty feet from the ground.

Hugh kept quite still for, perhaps, half an hour, watching the hole to see if the little animal would not come out again; but it did not, and he turned away, and went immediately back to the road where the wagons were standing.

Mr. Marvin and Uncle Charley were already there with two turkeys which they had killed.

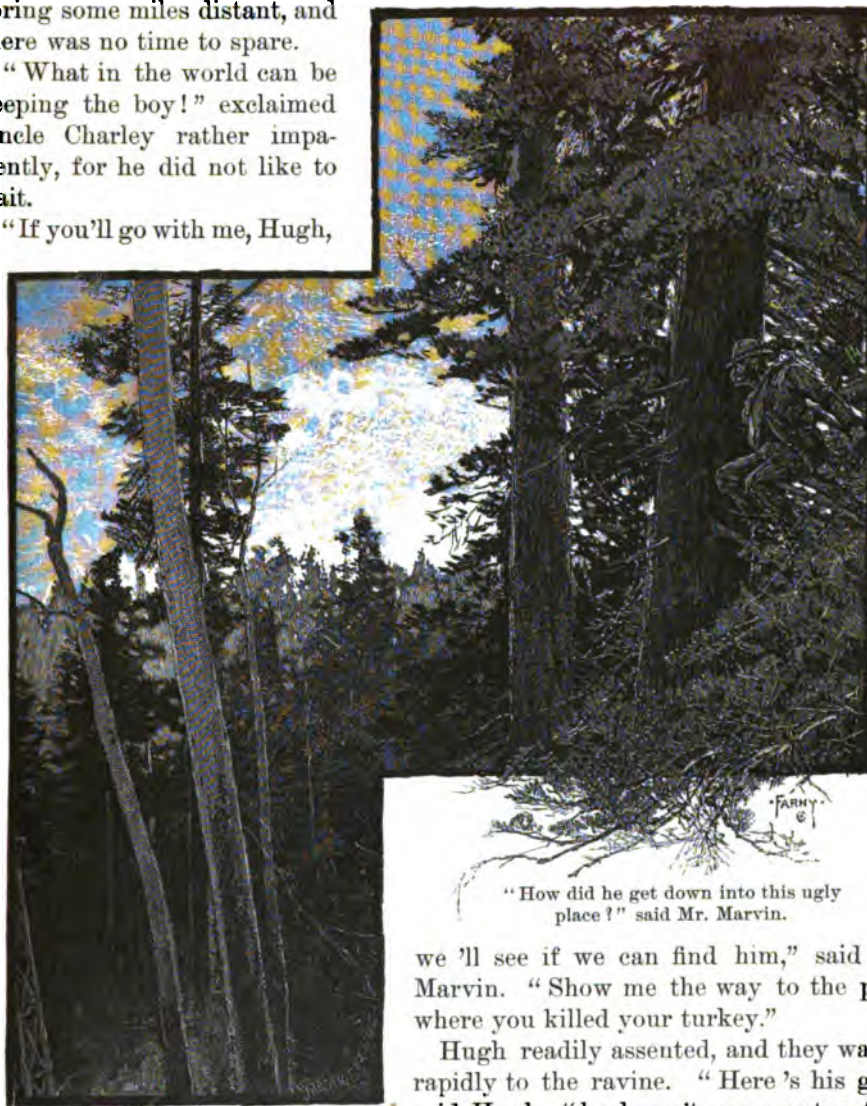
"Where's Neil?" inquired Mr. Marvin, as Hugh came up.

"Why, I left him over yonder in a gulch," said Hugh. "He went down into it to get a turkey we killed, and I went on after a fox-squirrel."

They waited a long while, but Neil did not come. Uncle Charley wished to camp for the night beside a spring some miles distant, and there was no time to spare.

"What in the world can be keeping the boy!" exclaimed Uncle Charley rather impatiently, for he did not like to wait.

"If you'll go with me, Hugh,



"How did he get down into this ugly place?" said Mr. Marvin.

we'll see if we can find him," said Mr. Marvin. "Show me the way to the place where you killed your turkey."

Hugh readily assented, and they walked rapidly to the ravine. "Here's his gun," said Hugh; "he has n't come out yet."

"Why, how did he ever get down into this ugly place?" queried Mr. Marvin.

"I—I—I don't know; I ran after the squirrel and did n't watch him," said Hugh, going to the edge of the bluff and gazing down.

Mr. Marvin now called Neil in a loud voice. Almost immediately an answer came, as if from some point midway between them and the bottom of the ravine.

"Is that you, Mr. Marvin?"

"Yes; what are you doing?" replied Mr. Marvin.

"I'm up in a tree. There's a bear down here. I'm afraid to climb down." It was Neil's voice, but it sounded unnaturally. The poor boy had grown weary of waiting for them.

"What kind of a bear is it?" asked Mr. Marvin, in a doubting tone.

"Why, it's a black bear, and a big one, too," cried Neil, emphatically. "I ran almost against it, and it growled and snarled at me. Have you your gun?"

"Yes, my Winchester rifle; but how can I get down there?"

"I don't know, and I can't imagine how I am going to get out, either."

"Well, stay where you are for a while, and I'll see what can be done. Are you really sure you saw a bear?"

"I tell you I *know* I did," answered Neil, positively. "It's right down here in its den now. If you'll come down, I'll show it to you."

Mr. Marvin turned to Hugh and said:

"Go back and tell your uncle to come, and to bring all the rope that there is in the wagons. Be quick, now, and don't forget to tell him to fetch his rifle, too."

Hugh ran as fast as his legs could carry him.

Mr. Marvin's practiced eye had taken in the situation almost at a single glance. He saw that he must have a rope with which to lower himself into the bed of the ravine.

"You are sure it was not a stray hog you saw, instead of a bear?" he called to Neil.

"Sure!" cried Neil, "did n't I see its tracks first, just like enormous 'coon tracks, and then did n't I see the bear itself, sitting on its haunches and growling at me! I tell you, Mr. Marvin, it's a bear and no mistake."

In a very short time, Uncle Charley and Hugh came with their guns and the ropes.

"What's up now?" demanded Uncle Charley.

"Nothing up," said Mr. Marvin, "but something down. Neil is in the ravine, and a bear has treed him, I guess."

The situation was soon explained to Uncle Charley, and it was decided that Mr. Marvin should be lowered into the ravine.

Two or three of the long, strong ropes used for tethering the horses were tied together, and one end having been securely fastened to a tree at the edge of the cliff, the other end was flung below. Mr. Marvin then swung his gun on his back, and taking hold of the rope, climbed down without trouble by pressing his feet against the face of the rock.



Head of the black bear.

"Where are you, Neil?" he cried as soon as he reached the ground.

"Here!" answered Neil, rapidly descending from his perch in a little tree. He was looking rather haggard and pale.

"Well, where is your bear?" said Mr. Marvin, with a touch of sarcasm in his tone.

"Now, Mr. Marvin, you are making fun of me," said Neil, in a half-resentful tone, "but come with me and I'll show you." Saying this, he led the way to the bear-tracks.

"Look there! What do you say to that?" he asked, pointing them out to Mr. Marvin, who examined them carefully.

"They are genuine bear-tracks," said Mr. Marvin, "and fresh ones, too. Where did you see the bear himself?"

"Up yonder, farther," said Neil, pointing with his finger; "but I want my gun before I go."

Mr. Marvin now began to have some faith in the bear story, and he said they would go back and have Neil's gun lowered to him by the rope. This was done in a few moments, and at Neil's suggestion Uncle Charley and Hugh went round the head of the ravine to the other side and stationed themselves near the place where they supposed the bear might come out of the hollow.

"Now," said Mr. Marvin, as Neil loaded his gun with shells of heavy shot, "let's find your bear in short order; there's no time to lose."

"Well, come on," said Neil, leading the way.

They soon reached the little crooked path. Mr. Marvin scrutinized this very closely before starting to follow it. The rough, vine-covered heap of stones and the fallen tree were just visible. Neil pointed them out to Mr. Marvin and said, almost in a whisper:

"The bear is right over on the other side of those stones under the edge of a projecting part of the cliff. He's a big one, too!"

Mr. Marvin started up the path and Neil followed him closely. Their progress was slow, owing to the steepness and narrowness of the way, but the distance was so short that they soon reached the pile of stones. Mr. Marvin noiselessly climbed up and peeped over. Neil was by his side in a moment.

The bear was now standing on its haunches, with its fore-feet lifted off the ground. It really was a monster in size, and appeared to be ready for a fight.

"Aim at his breast, Neil!" Mr. Marvin rapidly muttered.

The next instant the ravine shook with the reports of their guns. The bear was hit, but it did not fall, nor did it attack, as Mr. Marvin had feared it might, but ran, rather nimbly for so large an animal, up a ledge of the bluff a little to one side of its den.

"Look out above!" yelled Mr. Marvin. "Bear coming!"

"All right, let him come!" rang out Uncle Charley's clear voice.

Scarcely had the words been spoken, when "bang" went his gun and Hugh's. Uncle Charley fired his rifle three times, Hugh shot twice.

"Dead bear!" shouted Uncle Charley. "Come on!"

Mr. Marvin and Neil discovered that there was an easy and well-defined path out of the den, following which they soon emerged from the gulch and found themselves where Uncle Charley and Hugh were standing by the dead bear.

"He ran right at us!" cried Hugh, excitedly. "We did n't have much time, I tell you! Is n't he a big one?"

Neil was too much out of breath to speak. He stopped and gazed at the huge animal and felt truly thankful that he had escaped from its terrible claws.

"But where's your turkey, Neil?" asked Hugh.

"Why, I forgot it," said Neil, "it's down there in the bear's den, I suppose."

Uncle Charley went with them into the bear's den, where they found the turkey lying upon the bones of some small animals that the bear had eaten.

"It's a wonder he had n't made a luncheon of the turkey," said Hugh.

"He was n't hungry, perhaps," said Uncle Charley.

When Mr. Marvin had finished skinning the bear he hung the hide and hams across a long pole so that he and Uncle Charley could carry them to the wagons.

Samson and Judge opened their eyes very wide when they heard the story of Neil's adventure.

It was late at night when they reached the camping-place and they were all too tired and sleepy to talk much. The following day they reached Uncle Charley's house in time for supper.

Samson and Judge got all the negroes of the place around them and entertained them with highly colored accounts of the trip.

XIX.

GETTING READY FOR FLORIDA.

UNCLE CHARLEY and Mr. Marvin spent the next two weeks in drilling the boys in the practice of wing-shooting; for, though Neil and Hugh had made great progress in the method of handling their guns, they had, as yet, scarcely learned the "A-B-C" of the theory and art of shooting. They had fallen into some faults, too, during the trip, and these were a great deal harder to get rid of than they had been to acquire.

During these two weeks, the following was the order of affairs each day: They arose in the morning in time for breakfast at six o'clock; after breakfast

they had a drill in shooting till ten ; then came two hours of study for the boys, while Uncle Charley and Mr. Marvin rode over the plantation ; dinner was served at one and lasted an hour, after which the boys were free for two hours ; then came another hour of careful drill, followed by a light supper ; then two hours of chatting or reading, and to bed at eight.

Mr. Marvin's method of drilling the boys was so simple that any one can follow it with very little trouble. He made a spring-trap of a flexible, elastic piece of wood, four feet long and three inches wide by a half inch thick, which he fastened at one end securely to a thick board, its middle resting firmly on a cleat, at an angle of about thirty degrees. Upon the upper or free end of this spring-piece he fastened a tin blacking-box, hollow side up. A notched trigger was fixed by a hinge to the board in such a way that, when the spring was bent downward over the cleat, the notch could be made to hold it in that position until it was released by pulling a long cord attached to the top end of the trigger. This trap was used as follows :

The elastic piece was bent down and made fast by the notch in the trigger. Any small object upon which shot would take effect was then placed in the box. The pulling-string being sixty feet long, when all was ready, the shooter stood eighteen yards from the trap, while the puller took up his position a little behind and to one side of him. When the shooter was ready, he said : " Pull ! " and instantly the puller gently drew the string, which released the " bender " of

the trap, and the small potato or block of wood, or whatever formed the target was thrown into the air, and shot at before it fell.

The wide board, which formed the base of the trap, was fastened firmly to the ground, by driving long stakes through holes made in it for the purpose.

Traps with steel springs, and hollow glass balls for targets, can be had of dealers in sportsmen's goods ; but they are quite expensive, and Mr. Marvin's arrangement is just as good.

Neil and Hugh at first shot with a single trap ; then two were used for practicing at double wing-shooting. Sometimes Mr.

Marvin would have them turn their backs to the trap, with directions to wheel about and fire, at the word " pull." This drill was interspersed with some pleasant talk on shooting and on the habits of game-birds. Mr. Marvin himself sometimes took a gun and performed some quite wonderful feats of marksmanship. For instance, with his rifle he hit a potato twice before it



At the traps.

could fall from the height of fifteen feet when thrown into the air. But the main thing that he sought to teach the boys was the habit of aiming correctly and of handling their guns carefully. Their next trip was to be a long one, in which Neil and Hugh would necessarily have to depend largely upon themselves, and it was Mr. Marvin's desire to have them so trained that no accident need be feared.

Uncle Charley had written to an old hunting friend who lived on the Gulf coast of Florida, to hire him a good staunch boat large enough for the whole party and their luggage, camp equipage, dogs, *et cetera*. The plan was to coast from St. Mark's to some point on the lower part of the Florida peninsula, stopping wherever they pleased to go into camp and hunt; Mr. Marvin's object being to collect plumes for the market, and bird-skins and rare specimens of any kind for the Smithsonian Institute.

Such an expedition required a great deal of preparation and forethought. Every need had to be anticipated and every exigency guarded against as fully as possible. This kept Uncle Charley busy.

The thought of going away down to the haunts of the heron, the golden plover, the ibis, the spoon-bill, the crying-bird, the snake-bird, the alligator, and the panther, of seeing the orange groves, the palm-trees, the wild semi-tropical jungles, the mangrove islands, and the dreamy lagoons, and of coasting along the border of the Gulf Stream, under the fair Southern sky, so charmed the boys that they could scarcely sleep or eat.

Samson said he did not care about going "down to dem yallergator swamps," and he "reckon'd he'd stay at home"; but Judge wished to go wherever Neil and Hugh went, even if there was danger.

Neil sent for a new sketch-book and a diary, a supply of pencils and water-colors, and a hand-book of botanical drawing. He was resolved to spend more time than formerly in sketching; for it surprised him now to find how well some of his sketches looked.

"I shall get all the benefit I can out of my excursions," he said to Hugh. "It may be that the knowledge I gain in this way will sometime be of great use to me."

"Of course it will," responded Hugh. "I wish I could draw and paint, and be industrious, too, but I can't. You're more intellectual than I am, I guess. I heard Uncle Charley say you were, anyway."

Before they started South, Mr. Marvin stuffed and mounted the skin of the owl Hugh had killed. It was a handsome bird, with perfect plumage, and its eyes were as natural as life. Hugh expressed it to his father as a Christmas gift.

It pleased the boys greatly when they saw an account of their bear adventure, filling almost a column of their home paper, *The Belair Bugle*. A reporter had obtained the particulars by interviewing their father, and had then dressed them up until the affair really had the ring of a thrilling encounter.

"What will Tom Dale and the rest of the boys think of that?" exclaimed Hugh delightedly. "Wont they wish they were along with us?"

"What will they say when they see that same bear's skin used by papa for a lap-rug in his sleigh?" said Neil. "That 'll prove to them that the story is true."

"I mean to send papa a panther's skin from Florida," said Hugh.

"And a fine collection of alligators' teeth," added Neil.

"And I 'll kill a roseate spoon-bill and get Mr. Marvin to mount it, as he did the owl, and I 'll send it to Tom Dale," said Hugh.

The evenings were now quite cold in Tennessee. There was a light fall of snow, and the wind was sharp and keen. Uncle Charley's sitting-room had a wide fire-place, with tall brass andirons and a stone hearth. A big wood fire flamed and crackled there constantly, and the boys thought there were few things more enjoyable and comfortable than to sit before it in an arm-chair and listen to a good story read aloud.

Uncle Charley had but few books that would interest boys. He took all the magazines, however, and the *London Field* and several American journals devoted to shooting and fishing, so that Neil and Hugh found plenty of good reading matter quite suited to their prevailing line of thought. Then Mr. Marvin was generally ready with reminiscences of his hunting adventures, into which he always managed to insert some good advice, or some wise suggestions, intended for the benefit of the boys.

So the time passed, and at last the day of their departure for Florida arrived. Once more they were on the cars, flying southward at the rate of thirty or forty miles an hour. We need not follow them step by step. Let us hurry to the warm, green Gulf, and find them sailing over its bosom, their little vessel stanch and true, and all of them as joyous as the sweet sea-breeze itself.



XX.

DRIFTING ALONG THE COAST.

HAVE you ever sailed on the Gulf of Mexico? In winter the water near the west coast of the peninsula of Florida is usually as calm as an inland pond, so far as big waves are concerned, and the breezes seem specially designed to make sailing safe and enjoyable.

The boat that Uncle Charley had chartered was called the Water-fowl, and was about thirty feet long, by ten or twelve feet wide, decked over for about half its length, and furnished with a supplementary canvas awning, which could be used or taken down at pleasure. It was rigged with a mainsail and jib, had a center-board, and was, in fact, a very stanch, if not a very fast or beautiful little craft.

Uncle Charley had hired the owner of the Water-fowl, Andrea Gomez, to go along as sailing-master. He was of Spanish descent, about fifty years old, short, broad-shouldered, and very dark. He was a good sailor, and knew almost every island and reef and river on the Florida coast.

It would be difficult to exactly describe the sensations of Neil and Hugh, as they felt the sea palpitating under them, while the gentle breeze blew them along at the rate of four miles an hour.

At St. Mark's, they had written long letters to their father, directing him to address them at Tampa. Hugh had also written to Tom Dale. They felt as if they were embarking on a mysterious and wonderful voyage to some romantic land from which they might never return. Some such impression as this usually fastens upon one who for the first time sails upon that warm Southern sea.

Neil stood upon the little deck and gazed dreamily about him. What did he see? In one direction a low, dark shore of marsh-grass and tangled woods, with a border of shining white sand; in every other direction, a sheet of green-blue water, that met the sky and blended with it in a creamy line at the horizon. How very, very far away seemed his home at Belair, in cold and snowy Illinois!

The sun beamed down upon the deck with real summer fervor, but the breeze was cool and sweet. A few gulls, drifting here and there, flashed their wings in the light, and swarms of pelicans wheeled around the sandy bars along the shore. As the boat kept on its course, the outline of the shore seemed to break up into fragments, hundreds of small islands appearing along the coast. Now and then a picturesque grove of palmetto-trees stood up in clear relief from the

sand ridges on the main-land. Some gulf-caps, those strange clouds of the Southern sea, hovered in the far western horizon.

Mr. Gomez, the sailing-master, was a very quiet man, and sat by the tiller all day, smoking a short pipe most of the time.

Mr. Marvin and Uncle Charley lounged in the after part of the boat, talking or reading. Judge slept on his back in the warm sunshine, with his head bare and his face toward the sky.

When night fell, the sloop was run in among some shore islands to a shallow, sheltered spot, and anchored. There being no place to land, supper was cooked on board, and the whole party slept in the vessel.

Next day the breeze was fresher, and the waves ran so high that Neil, Hugh, and Judge were seasick; but the sloop bowled steadily on, notwithstanding, and made many miles before night fell again. It was a terribly long day for the sick boys, and they were glad indeed when a landing was made on a dry, sandy island, and they were permitted to go ashore to sleep. Such a sleep as they had, too, on the warm sand with the salt, delicious breeze of the Gulf blowing over them! When they awoke, the sun was almost an hour high, and Uncle Charley had been fishing with fine success, and had brought in several three-pound sheep's-head.

Mr. Marvin had been around the island with his gun, but had seen nothing worth shooting.

As for Mr. Gomez, he had made coffee and prepared an excellent breakfast.

Neil and Hugh and Judge ran down and bathed in the surf, and when they had dressed themselves, they felt as fresh and happy as if they had never heard of sea-sickness.

"Ob all de dreams, I had 'em las' night," said Judge. "I dre'mp I had a rifle an' I see a lion, an' de lion hit come at me, an' when I try to shoot 'em de gun wa' n't nothin' but a' umbreller wid de handle broke! De lion hit jis' blare hits eyes right wide open and jump clean ober me! I neber was so sceered! 'Spec' dat 's de sign ob sumfin', don't you?"

"It 's a sign you 'll miss your breakfast, if you don't hurry and get yourself dressed," said Hugh. "The smell of that broiling bacon makes me ravenous."

"Yes, and dem fish smell good, too," said Judge wagging his head and buttoning his suspenders.

"Oh, look in Judge's hair!" cried Neil, as they started for the camp.

Hugh looked, and began to laugh merrily. A "fiddler-crab," one of those funny little animals, somewhat like a small craw-fish, had become tangled in Judge's wool while he was bathing.

Judge put up his hand, and touched the squirming thing.

"Take 'im off! Take 'im off!" he shouted, prancing around on the sand, his wide-open eyes seeming almost twice their natural size.



Moonlight on the river.

Neil and Hugh held their sides and laughed as only merry boys can. No monkey ever went through more comical contortions of face and body than did Judge, as he danced frantically about in his fright. With his arms akimbo and his legs bowed outward, he "jumped up and down" on the beach, yelling at the top of his voice:

"It 'll bite me! Take 'im off, quick! Take 'im off, quick!"

Hugh had pity on him at last and brushed the fiddler off.

"I 'se not gwine inter dat water no mo'," Judge muttered, walking away indignantly.

When breakfast was over, they all went aboard of the Water-fowl and sailed away to the southward.

Two more days passed without any adventure of special interest. But the voyage grew more and more delightful and entertaining all the time. The voyagers saw vast numbers of aquatic birds hovering about strange islands or flying high overhead in long angular lines.

Neil sat upon the deck and wrote in his diary, or sketched whatever scenes he thought worth remembering.

One day as they were passing near an island they saw a number of snipe settle down on a marsh-meadow, and the boys asked the privilege of going ashore and shooting some. One of four folding canvas boats that Uncle Charley had provided was brought out and launched.

"Now," said Mr. Marvin, as the boys took their places in the little craft, with Neil at the oars, "don't kill any more than twenty or thirty. That will be as many as we can use, and you know we have agreed not to destroy any birds for mere wantonness."

Neil promised that they would not transgress the rule, and then, bending to the oars, he pulled for the marsh. They found some difficulty in making a landing, the shore being very muddy, but at last they found firm footing. Back a few steps from the water the meadow was higher and the walking good. The boys separated, each sharply on the lookout for a first shot at the game.

They had never hunted snipe, and, save such information as Neil had gathered from books, they were unacquainted with the bird's habits.

The sloop had come to anchor, and Mr. Marvin and Uncle Charley watched from the deck as the boys proceeded to tramp over the meadow.

Presently two snipe sprang into the air in front of Hugh, with a little sharp cry that sounded like "'scape, 'scape," and they did escape. Their flight was like a corkscrew in its line. Hugh blazed away, but did not touch a feather. At the sound of his gun, several more birds took to wing, giving Neil and Judge a chance for a shot; but they did not do any better than Hugh. It was a case of clean missing for all of them.

Uncle Charley, who was watching the attack through a strong field-glass, laughed heartily.

"The boys have met their match," he said to Mr. Marvin; "they don't know how to shoot snipe."

"Experience is the best teacher," replied Mr. Marvin; "they'll soon discover how to aim. It bothers the best of shots, for a while, to become accustomed to a snipe's eccentric flight."

Judge's old flint-lock killed the first bird, but it was n't a snipe. It was a clapper-rail, called by the naturalists *Rallus crepitans*, which he flushed from some tall grass beside a little pond. This bird flew rather heavily, affording Judge a most excellent target.

Neil and Hugh fired shot after shot, but not a snipe fell.

"I don't believe these cartridges are good for anything," said Hugh in a hopeless tone.

"Oh, it's not the fault of the shells," responded Neil; "it's the wriggling way that these snipe have in flying; a fellow can't cover them. I wish Mr. Marvin would come over; he would show us how to hit them."

"Well, I'm not going to give it up," exclaimed Hugh. "I'll shoot as long as my shells hold out."

Judge kept banging away with his funny old gun, and when at last he did really kill a snipe, his joy had no limit. That he had bagged two birds before Neil or Hugh could kill one seemed to him a most glorious victory.

"Mebbe yo' wont call my gun a' ole blundybus no mo'!" he cried, holding up his game and making comical grimaces at the white boys.

At last Neil began to understand the spiral turns of the snipe's flight, and then the birds fell at nearly every shot he fired. Hugh also found the knack, so that finally the sport grew very exciting.



"Not a snipe fell."

Uncle Charley was delighted when, by the aid of his field-glass, he saw that the boys were mastering the difficulty.

"Bravo!" he exclaimed, "bravo! Neil is knocking them down beautifully now. He has caught the idea. There, Hugh killed one, too! Another one down for Neil,—another for Hugh. Why, that's grand sport they're having over there, Marvin; we've missed a treat!"

"Yes; but I thought we'd better not go. We should have killed all we needed before the boys could have got their hands in, and that would have cut them out," replied Mr. Marvin.

The three boy hunters kept up a noisy fusillade across the broad marsh-meadow. They entirely forgot their promise, and no doubt would have killed a great many more than thirty, if Mr. Marvin had not blown the bugle-horn, which was the signal for them to return to the boat.

"Oh, but did n't I hate to quit!" exclaimed Hugh, as Neil was rowing them back. "I was just beginning to get the knack of it."

"Dat's jis' me, zac'ly," said Judge. "I was a-ketchin' onder dat whirlymegig ob a way dey has o' flyin', an' I could 'a' brought down heaps ob 'em, ef I'd had a little mo' time."

When they all were aboard the sloop again the birds were counted, and the score stood as follows: Neil, 15; Hugh, 10; Judge, 3—total, 28.

The clapper-rail that Judge had killed was not included in the count, because Mr. Marvin said it was so slow in its flight that it would not be fair to reckon it in a score where snipe-shooting had been the undertaking.

For the rest of the day they sailed before a light breeze, and at night they slept on deck.

Neil had made some drawings of the rail and snipe, and put a description of the snipe-hunt in his diary.

They did not stop to shoot any more until they reached Tampa, a town far down the coast of the peninsula, where, as they had expected, letters and papers from home awaited them. It was a great shock to Neil and Hugh to learn that Tom Dale and another Belair boy named Jere Long, had been drowned by falling through an air-hole in the ice while skating a race. Hugh cried, for he thought a great deal of Tom.

"Who ever would have dreamed that with all our carelessness with our guns and our exposure to all sorts of dangers and accidents, we would be safer than poor Tom Dale and Jere Long, and they at home, too?" said Neil, sadly.

"I suppose papa was glad we were not there," said Hugh, "for we should have been in that race sure, and we might have gone into the air-hole just as they did."

The orange-groves about Tampa were loaded with luscious oranges, and the bananas were ripe and mellow. Uncle Charley sent several large boxes of both kinds of fruit aboard the *Water-fowl*.



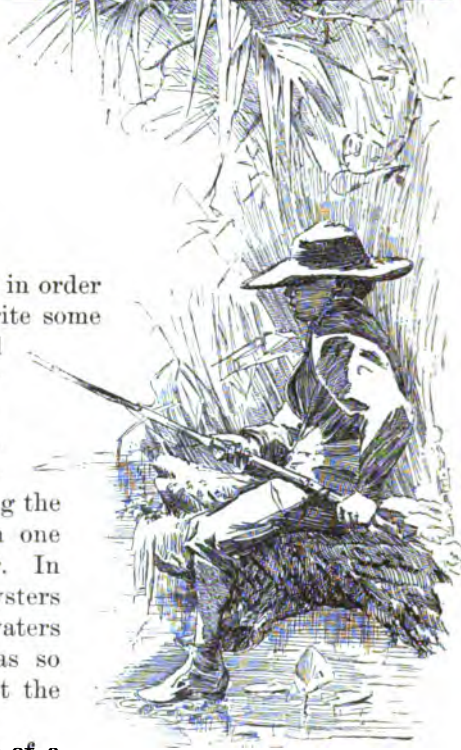
XXI.

AMONG THE FLORIDA BIRDS.

AFTER a stay of two days in Tampa, in order to give Uncle Charley time to write some business letters, and to examine some real estate for a friend in Tennessee, our party sailed out of the beautiful bay of Tampa at sunrise, and turned southward down the long Sarasota river, or—more correctly speaking—bay, that extends along the peninsula between the coast islands on one hand, and the main-land on the other. In some places, owing to large reefs of oysters and mud-banks, the navigation of those waters is quite dangerous, but Mr. Gomez was so familiar with the channels that he kept the sloop clear of all obstructions.

Mr. Marvin desired to find the mouth of a certain large creek that empties into the Gulf about twenty-five miles below the northern end of the bay, as he had been told that through it a fine region for plume-hunting could be reached. But it was no easy matter to discover which one of the many indentations of the shore was the entrance looked for.

It was ten o'clock at night, with the moon shining brightly somewhat down the western slope of the sky, when they anchored under a low bluff covered with cedar-trees. Here Neil and Hugh saw their first sharks. The huge fellows were chasing a swarm of mullet, and in their eagerness to capture the smaller fish



they would follow their prey into water so shoal that their broad black backs would break through the surface, while the mullet would leap bodily from the water, sometimes falling a short distance out upon the shells or sand of the shore. It was a strange sight, and the swashing sounds, as the sharks struggled back into the deeper part of the channel, broke in upon the still, moonlit night with an effect not easy to describe.

Mr. Gomez went ashore and perched himself on the highest point of the bluff, where, as he sat smoking his pipe, he looked like a round-shouldered silhouette against the shimmering sky. At first they could not understand why the old sailor had gone up there; but soon countless swarms of mosquitoes, from a low marsh astern of the boat, assailed them in a body. The wings of those legions of warlike insects filled the air with an unbearably irritating murmur, and the onslaught of their piercing bills was almost maddening.

"Here, this wont do!" ejaculated Mr. Marvin, at last. "We shall be eaten up by these mosquitoes. We must go ashore."

All hands assented. Neil and Hugh took their double hammock and swung it between two cedar-trees, where a strong current of the Gulf breeze would blow upon it. And there they slept sweetly, entirely undisturbed by the mosquitoes.

Just before sunrise, Neil slipped out of the hammock, dressed himself, took his gun, and went for a short walk about the island. He found great numbers of deer-tracks leading into a dark, impenetrable cypress jungle but no deer were visible. By the margin of a still, grass-fringed lagoon he flushed some small herons and one or two plover; but nothing worth firing at appeared until, in passing around an outlying spur of the swamp, he came suddenly upon a pair of snowy herons, that took to wing within thirty yards of him. The flash and flutter of their broad white wings startled him at first, but he raised his gun in time to get a good aim at one of them, and brought it down in fine style. He fired at the other, but it had gone too far, and he missed it. Neil's bird, named by the naturalists *Garzetta candidissima*, was in full plumage, and he held it up proudly for the rest of the party to look at as he returned to camp just at breakfast-time. It measured thirty-nine inches from tip to tip of its wings. The plumes, so much prized as ornaments by ladies, lay loosely on its back, curling upward near their lower ends, as white as snow and as soft as silk. Mr. Marvin said it was a perfect specimen of its kind, the finest, in fact, that he had ever seen; and he asked Neil to let him prepare its skin for mounting.

The next day they reached the creek for which they were looking, and after a great deal of trouble brought the sloop up to a good camping-place some miles inland from the bay. Here the tents were pitched on a mound, with a wide meadow on one hand and a dense forest on the other. The heron-roost was a mile distant up the creek, but shoal water and an immense stretch of saw-grass, lily-pads, and clumps of aquatic weeds prevented their taking the sloop any farther in that direction.

The mound on which the tents were pitched was underlaid with a shell formation, and at a remote period had been occupied probably by a family of Indians, as a home. The remnants of an old palmetto hut were visible, and a few gnarled orange-trees and some guavas grew scattered about in the vicinity, while traces of a rude fence bordered the wood.

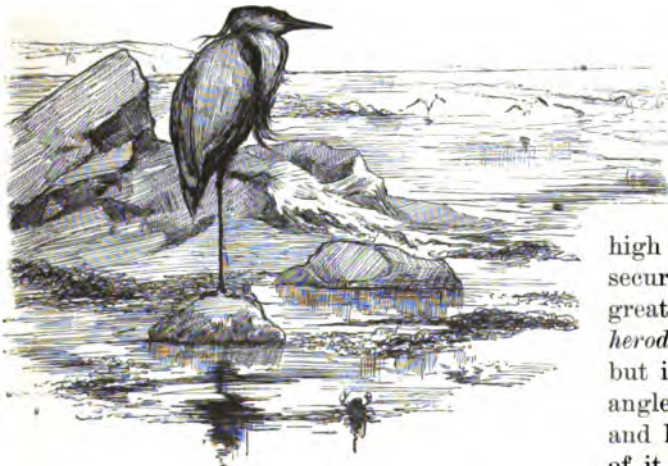
The boys were delighted to see flocks of snipe pitching down into the grass of the meadow, beyond which a small lake shone clear and bright, with a live-oak hummock on its farther side, and a fringe of tall grass and rushes around its border. Far off in the south-east, a ridge of sand with a thin line of palmetto-trees on its summit was softly outlined against the sky.

Next morning all were up early. The night's sleep had been refreshing, and breakfast was eaten with vigorous appetites. Even while they were eating they saw several large flocks of water-fowl flying low across the meadow toward the lake. Other flocks passed almost overhead on their way up the creek to some lagoon or pond.

It was arranged that Mr. Gomez and Judge should stay at the camp, while the rest took the canvas boats and pulled up the creek in quest of herons.

Neil and Hugh occupied one of these boats together, while Mr. Marvin and Uncle Charley each took a separate one. The stream had not much current, so that they were not long in reaching the lake above, where the water was full of weeds,

grass, lily-pads, and all manner of aquatic plants,—truly a heron's paradise.



The great blue heron.

While Neil was pulling the boat through a narrow water-lane between high walls of grass, Hugh secured a fine shot at a great blue heron, the *Ardea herodias* of our naturalists; but it was flying at a right angle with his line of sight, and he forgot to aim ahead of it. All large birds seem to fly much slower than they

really do, and they also appear to be much nearer than they really are; consequently, it is a common fault of young shooters in aiming at geese, herons, cranes, and ducks, not to allow for flight, and therefore to miss *behind* the game.

Hugh now took the oars, which he could do without changing his seat, the boat being a "double-ender," in order that Neil might try a shot at the next game they saw.

Mr. Marvin and Uncle Charley were already among the birds, and their guns were roaring almost continually.

The boys did not understand the windings of the water-lanes, and in consequence they soon found themselves pulling along the shore under the boughs of some grand old live-oak trees.

Suddenly Hugh cried out: "Oh, look, Neil, look! There 's a snake with wings! Quick,



Neil shoots a snake-bird.

shoot it before it gets away!" He backed water as he spoke, and stopped the boat.

Neil looked, and saw a strange, serpent-like neck, followed by a dark winged body, wriggling along in the water; the head was above the surface, the rest of it below. It was a hideous object as it squirmed and writhed along toward a patch of grass and weeds, and Hugh really believed that it was a winged snake; but Neil had read descriptions of the snake-birds, and knew at once that this was one of them. He fired and killed it; and upon examination it was found to be far less hideous than they had thought. It had a long slender neck and a rather queer head, and its habit of swimming with its body under water and its head out had given it the appearance of a regular water-dragon. The boys threw it in the bottom of the boat, as Neil wished to make a sketch of it and skin it when he returned to camp.

From the rapid firing kept up by Uncle Charley and Mr. Marvin, it was evident that they were making havoc among the herons; but the boys found

none, though snake-birds, named *Platus ankinga* by ornithologists, were now seen in every direction; it was sometimes difficult to distinguish them from the mottled moccasin snake so numerous in Florida.

At length, growing tired of the labor of rowing, and Neil wishing to gather some strange-looking flowers, they pulled the boat ashore at a dry point on the wooded side of the lake. While Neil was botanizing, Hugh went a short distance into the woods, hoping he might see a deer. The trees were mostly live-oaks and water-oaks of large size with wide-spread tops and buttressed roots; some giant vines were knotted and linked from tree to tree, and the foliage was so thick that scarcely a ray of light could fall through. Hugh saw no game, but a dull tramping sound almost overhead and the falling of large fragments of bark and rotten wood attracted his attention to the top of a very tall dead tree, and there he discovered a bird of which he and Neil had talked a great deal, but which neither of them had ever seen — an ivory-billed woodpecker — the handsomest of all American birds. It was pounding away vigorously with its great white beak against the lower side of a rotten limb, about eighty feet from the ground, and its broad back was fully exposed to Hugh's aim. He fired, and it fell straight down almost at his feet. This was indeed a prize, for he knew how his father would value such a specimen. He picked it up and ran back to Neil, who exclaimed:

"A *Campephilus principalis*! Wont Mr. Marvin be glad! I heard him say that a gentleman in New York had offered him fifty dollars for the skin of one!"

"But I want to send this to papa," said Hugh.

"Oh, you can't do that without Mr. Marvin's consent; for it was agreed that all valuable specimens, plumes, and eggs should belong to him," responded Neil.

"That's so," assented Hugh; "and I suppose it's right, too, for Mr. Marvin has taught us a great deal."

They went back to their boat and pulled across the shallow lake in the direction of the heavy firing kept up by the other two hunters, but before they could join them, the shooting was over. Mr. Marvin had the bottom of his boat padded with tufts of snowy and ash-colored plumes which he had stripped from the birds killed by himself and Uncle Charley. "Many a fine lady will wear these," he said, holding up some very long feathers. He was delighted when Hugh gave him the ivory-billed woodpecker.

Neil's good luck came as they were making their way back to camp. He killed a roseate spoon-bill — *Ajaja rosea* — by a splendid shot, that won the hearty applause of Mr. Marvin. It was quite sixty yards distant, and was flying straight across the direction in which the boat was moving.

The beautiful rose-colored wings, the long pale pink tuft of breast-plumes, and the brilliant carmine shoulder-feathers of this bird made it a prize almost equal in value to the *Campephilus principalis*.

"Very well for one day," said Mr. Marvin, in a satisfied tone.



Some of Nell's sketches.

XXII.

A SUDDEN DEPARTURE.

WHEN our plume-hunters reached camp again, Judge was found to be in a very excited state of mind. Great flocks of snipe had approached the edge of the meadow nearest the mound, and he had been waiting impatiently for Uncle Charley to return, as he had been ordered by him and Mr. Marvin not to leave camp before they came. He had heard the sound of the shooting up at Weed Lake, and that, together with the near approach of the snipe, had rendered him doubly restless. He had his old flint-lock across his lap, nursing it tenderly; his game-bag was at his side, and his shot-pouch and powder-flask slung in their places, ready for instant use.

"Neber see folks stay so long, no how," he grumbled good-naturedly; "seem 's like yo' not gwine t' come back at all. I's been mos' dead ter tackle dem whirlymegig birds down dar."

But the *Campephilus principalis* and the roseate spoon-bill had to be examined by him before he could go. Anything red charmed Judge, and the tall scarlet crest of the giant woodpecker and the dazzling carmine shoulder-plumes of the spoon-bill put him into raptures.

Mr. Gomez, during the party's absence, had cut some poles and built a shed which he had thatched with palmetto leaves. This made him a very snug open tent under which he had swung his hammock.

Neil and Hugh watched Mr. Marvin skin the woodpecker while Judge was banging away at the snipe over the meadow. Neil made a water-color drawing of the head of this grand bird, and an outline sketch of the spoon-bill.

Hugh could not resist the temptation of joining Judge in the snipe-shooting, so he presently snatched up his gun and went out upon the meadow. The grass grew in tufts, with a light trace of water or soft mud between. The birds usually rose singly, or in flocks of three or four, sometimes from near the feet of the hunter, flying low and dropping into the grass again after going not more than fifty yards.

Hugh soon began to flush them, and he aimed with great deliberation, reserving his fire until the game steadied itself after its first gyrations in the air. But he found it quite as difficult to hit them now as it had been on the island. He missed oftener than he hit, in spite of all his care. Suddenly he remembered that his shells were loaded with very large shot for heron-shooting. This accounted for his poor marksmanship. He went back to his tent and got some

cartridges loaded with number ten shot, and when he resumed shooting, he could hit a great deal oftener. The birds were very hard to find after they were killed, as they almost always fell in the grass, where the blades and stems were nearly of the same color as their feathers. This made Hugh wish for a dog; but Snip and Sly and Belt and Don had been left at Tallahassee, Uncle Charley having decided not to bring them any farther. In changing his cartridges, too, Hugh lost a good opportunity. He had just reloaded his gun, after killing a snipe, when, happening to look up, he saw a scarlet ibis flying overhead at a height of about one hundred and fifty feet. Quick as thought, he aimed a little ahead of the bright-winged bird and fired. The shot failed. He fired again. Not a feather fell, and the ibis, "like a flake of flame," swept on toward the Gulf. This was the only specimen of this gorgeous bird that the boys saw during their long ramblings in Florida. Hugh was very sorry he had not kept on using the large shot! It would have been better, he thought, to have killed fewer snipe and made sure of the scarlet ibis.

Judge did not stop shooting while there was daylight enough to see how to aim. He and Hugh together bagged twenty-five snipe. The score stood: Hugh, 16; Judge, 9.

That night it was discovered that Mr. Gomez was quite a musician. He played upon a flute until late bed-time, the mellow notes floating away to the haunts of the alligator and the dens of the bear and the panther. Neil and Hugh swung in their double hammock, with the cool night breeze blowing over them, and watched the brilliant Southern moon as it seemed to slip along under the almost purple sky. They resisted the approach of sleep and lay awake long after Mr. Gomez's music had ceased.

"Why can't one just stay here always," said Hugh; "I'm sure I never could tire of this delightful climate or of the fine hunting this region affords."

"Oh, but we'd grow to be men presently, and a man must have a business and do something to earn money," responded Neil in his matter-of-fact way.

"What's the use of money?" exclaimed Hugh; "a fellow might do without any money down here."

"Yes, you can say that, but how much do you suppose that this sport of ours is costing Uncle Charley?" said Neil. "I heard him say that Mr. Gomez charges him five dollars a day for himself and the sloop, and then there's all our supplies!"

"Well, Uncle Charley's rich," responded Hugh; "he does n't mind it."

"Of course he does n't mind it; but he could n't spend so much money if he had n't first made it," Neil replied; "I have heard both father and Uncle Charley say that they were born poor."

"I did n't know that," said Hugh in a surprised tone. "How did Uncle Charley get rich, then?"

"By farming and cattle-raising. He began with a few acres and small herds, and kept on till he owned a thousand acres and hundreds of cattle, horses, mules

and sheep. He has worked very hard all his life; that's why he is now able to do as he pleases."

"Well, I wish I had a large farm," said Hugh, "and lots of money. I would n't stop hunting till I had my fill of it for once."

"I would rather be a great painter than a great shooter," said Neil. "I don't mean to neglect my studies on account of my love of hunting. I intend, when

we are at home again, to redouble my efforts to get a fine education and a good knowledge of art-work. I want to be great and famous."

"I think you will be a great man some day, Neil," said Hugh, "for I have heard Mr. Marvin and Uncle Charley say that you show great genius for drawing and coloring."

"Oh, did they say that? I'm so glad," murmured Neil, "for sometimes I get discouraged and think I will stop trying. It's such a difficult thing to draw well."

The sweet wind blew over them and swayed their hammock gently. They fell asleep, Neil to dream of grand achievements and great fame as an artist, and Hugh to dream of happy adventures among the strange birds of those semi-tropical groves and plains.

Early next morning they

were startled from sleep by loud voices and violent language. Hurrying on their clothes, they found that a party of very rough-looking men had come up the creek in a large boat, and were insisting upon taking possession of the mound for their camp. They claimed to have leased from the owner the hunting on a large area of ground about there.

"Show your lease," Uncle Charley was calmly saying, "and we will respect it, no matter what you may think of you."

"I don't believe you have any lease, and I think you are a set of impostors," said Mr. Marvin. "You'd better take good advice and go back the way you came, and in short order."



The haunts of the alligator and the panther.

"Joe Stout, I know *you*," said Mr. Gomez, stepping forward and addressing the fellow who appeared to be the leader of the intruders; "you never in all your life had money enough to lease a potato patch for fifteen minutes."

"Hello! Gomez, is that you, old man?" remarked the ruffian, in a more pacific tone.

"You can see for yourself," answered Mr. Gomez; "and you know that when I camp at a place, I'm there to stay as long as I please."

The men in the boat now held a council in low tones, after which the leader said:

"Well, I guess you've got the right to the campin'-place, so we'll go away."

With that they turned their boat about and pulled down the creek until they passed out of sight around a bend.

"They're a bad lot," said Mr. Gomez, when they were gone; "we shall be in danger so long as we stay in this vicinity. They wont tackle us together, but if they were to find one or two of us away from our party, they'd shoot us in a minute, on very little provocation."

"Where are they from?" inquired Uncle Charley.

"I don't know," replied Mr. Gomez, "but Joe Stout used to be a sponger up around Cedar Keys; I used to see him often on my coasting voyages."

"What is a sponger?" asked Hugh.

"A man who fishes for sponges," replied Neil. "A great many sponges are found in the Gulf off the west coast of Florida."

"Well," said Uncle Charley, decidedly, "you all may get ready to move at once. I'm not down here on a fighting expedition. Strike the tents and move everything aboard as quickly as possible."

There was no room for objections or suggestions when Uncle Charley gave an order, so without a word all hands fell to work, and in less than half an hour the sloop was heading down the creek toward the Gulf. The wind was favorable, but they often had to use the oars, as the stream was very crooked. They passed the boat of their late visitors about half a mile from the camp. There was but one man in it; the others having probably gone ashore to hunt. The man in the boat stared at our friends as they sailed past, but he did not say a word. The bay was reached about noon, and Uncle Charley ordered Mr. Gomez to steer for Casey's Pass, which is the south-west outlet to the bay.

"We will run down to Charlotte Harbor," he said, "where game of every kind is more plentiful, and where there will be no one to molest us."

That night they anchored under the shelter of a reef, and next morning they sailed out into the Gulf, running close to a merry breeze. At times they were almost out of sight of land, and their little sloop rose and fell with the long rolling waves; but the boys were not seasick. Mr. Gomez said they were getting to be very good sailors. They saw two or three stately ships far westward, bowling along under some yellow Gulf-caps, and a long dark steamer left

a trail of gloomy smoke behind it near the southern horizon. Swarms of sharks, shadowy and dim, sported in the greenish water beside the sloop. They looked quite picturesque and harmless, but they would have been ugly customers for a man overboard.

One big fellow rose almost to the surface, and Hugh tried a shot at it with Uncle Charley's rifle. It made a great commotion, but they could not tell whether it was wounded or not, though Mr. Marvin said he thought it was.

Neil spent most of the time, until they reached Charlotte Harbor, touching up some of his sketches and adding some pages to his diary.

XXIII.

UP THE CALOOSAHATCHEE. A PANTHER.

IN due time our friends reached Punta Rassa, a small village, and waited there several days for a breeze that would help them up the Caloosahatchee River.

From Punta Rassa to Fort Myers, a distance of twenty-five or thirty miles up the river, was the next run. The first part was through a rough and dangerous channel, choked with oyster bars and mud shallows; but when at last they were fairly in the Caloosahatchee, it was found to be a grand and beautiful river, with high banks upon which grew noble forests of pine and oak. They passed Fort Myers just after night-fall, but the moon was shining brilliantly, showing the place to be a forlorn-looking little village. Three or four miles beyond, they anchored near a small mud island, and slept well, despite some trouble with mosquitoes.

Neil and Hugh heard alligators booming about in the lagoons and mud flats, and a strange sense of remoteness and isolation stole over them. They began to feel as if they were getting into a country where large and dangerous animals roamed at will, and where strange trees and unknown plants and flowers might be found. They knew, too, that not far eastward of them lay that mysterious inland lake called Okeechobee, around the borders of which still dwelt, in their own wild way, the last remnant of Osceola's once famous Indian warriors. Neil had read translations of the old Spanish accounts of this region, clothed in the fascinating mists of romance, and of the old inexplicable mounds, fortifications, and canals discovered by the early explorers, and he hoped that it might turn out that he should be able to find the wonderful pearl-fisheries of the savages.

When morning came, they made haste to work the boat past some ugly mud islands, through shallow, treacherous channels. This took till nearly noon, the sloop going aground quite often on hidden bars of black mud.

And now they began to get glimpses of alligators,— huge, hideous creatures, — sliding into the water of the dark lagoons on either side of the river.

In many places the banks of the stream were very low, and our friends, standing on the deck of the *Water-fowl*, could see far along natural openings in the woods to where green savannas, those beautiful Southern prairies, shone in the sunlight.

Now and then a small sleek deer would bound away into the thicket or brakes, or stand and gaze wildly at the sloop as she slowly swept by.

Water-birds seemed almost to fill the air and to cover the stream in places,—



They heard alligators booming in the lagoons.

the sound of their wings and their harsh cries filling the air, as though bedlam had been let loose.

Neil and Hugh were very anxious to shoot at some of these many wild things, but Uncle Charley had forbidden them, as he did not wish to stop to collect the game they killed, and he did not approve of shooting merely for fun.

Uncle Charley, Mr. Marvin, and Mr. Gomez had to resort to the oars, and Neil to the pushing-pole, in order to help the sloop along, whenever the wind fell. The progress was slow, and Hugh grew very impatient, especially when he saw a raft of wood-duck swimming about on a little estuary, under the richly variegated pendants of air-plants, that swung from the boughs of overhanging trees. He could not help aiming his gun at them, although he did not shoot.

"Hugh," said Mr. Marvin, "you might get out your tackle and catch us some fish as we go along. Put a spinning-spoon on the line and troll it astern." The suggestion was a happy one. Hugh went to his box and took out a strong jointed bass-rod, fitted with a reel and two hundred feet of strong line. He adjusted a trolling-spoon, and when all was ready, he cast astern and waited the result. It was not a minute before something struck the spinner, and his rod was bent almost double in a trice.

"Oh, Neil, Uncle Charley, Mr. Marvin! It will pull me in! Come quick!" he cried, holding on manfully, with his feet braced and his shoulders raised.

"Loose your reel! Give it line! Let it run!" cried Mr. Marvin and Uncle Charley in a breath, as they dropped their oars and sprang to Hugh's assistance.

Uncle Charley stood ready, but he did not wish to interfere unless it became absolutely necessary. Hugh pressed the spring, and the fish ran off with fifty feet of line at a single rush. Then began a desperate struggle. This way and that, and around and around, the strong, gamy victim sped, making the line sing keenly, while the reel spun like a top. Uncle Charley acted as general, directing Hugh in his movements with such words as "Give it a little more line—check it now—reel up fast or it'll foul the line in those bushes—hold on, it's sulking; now, then, give it a little jerk!"

Every one on board was excited, and watched the fight with great interest. Hugh's arms and hands became very tired, but he was too plucky to give up. He set his lips firmly and kept steadily to his work.

"You'll conquer it directly," said Mr. Marvin; "watch it closely; don't let it have any slack; keep it fighting; it'll soon tire."

Hugh felt the importance of his position, and redoubled his efforts. Suddenly the fish rose to the surface and "somersaulted" clean out of the water.

"My! what a big fellow it is!" cried Neil.

Judge was stupefied with amazement. He never before had seen so large a fish hooked.

This last maneuver of the fish was very trying on the tackle, but it stood the strain, and Hugh promptly gave out some line as another surge followed. Some wide circles were now run at lower speed by the game, and then Hugh felt the strain grow less.

"Now, give him the butt!" cried Uncle Charley.



"Now give him the butt!" cried Uncle Charley.

Hugh checked the line suddenly and firmly, and finding no more fight at the end of it, reeled it up slowly until the fish was drawn to the surface close to the boat.

Mr. Marvin had the gaff ready, and leaning over the gunwale, hooked the big fish and lifted it aboard. It was a cavalli of seven or eight pounds weight.

That night they anchored under a bluff and went ashore to cook their supper. As there was no danger of rain, and as the mosquitoes were troublesome on the water, they hung their hammocks on the highest ground they could find. Here the wood was thin and the trees small, though at a few rods distance began a densely timbered swamp that looked impenetrable. They had eaten nothing but a cold luncheon since an early breakfast, and all were very hungry. It was while they were sipping their hot coffee, and talking over the day's experience by a

dim little fire, that they first heard a peculiar cry, or wail, coming out of the swamp. Uncle Charley stopped in the midst of a sip; Mr. Marvin turned his head to one side to listen intently; and Mr. Gomez said:

"A panther!"

Judge jumped as if something had bitten him. "Ugh! Laws o' massy! What we gwine do?" he cried, for he was badly frightened.

"Let's go and kill it," said Hugh.

"How far away do you think it is?" Neil inquired of Uncle Charley, as they heard it scream again.

"It's right down there in the swamp; it can not be very far away," replied Uncle Charley.

"I thought I heard dogs barking awhile ago," remarked Mr. Gomez. "I think the Indians are on a big hunt. Perhaps they have driven the panther into this little hummock."

"Dem good-fur-nuffin Injuns 'll jes' scalp us, for sho'," muttered Judge.

The boys looked at each other a little uneasily. It was not very pleasant to think of being surrounded by savages and having a panther prowling about close to their unprotected camp.

"Oh, the Indians are harmless," said Mr. Gomez, "but we'll have to look out for that panther; for, if it has been chased for a day or two, it may be desperate and dangerous."

Arrangements were accordingly made to divide the night into watches. Neil and Hugh were to sit up until twelve o'clock, after which Mr. Marvin and Mr. Gomez were to divide the rest of the night, allowing Uncle Charley, who had suffered all day with headache, to get undisturbed rest.

A sufficient supply of dry wood had been gathered, so that a fire could be kept burning all night. The moon did not rise until about ten o'clock; but when its light began to fall across the landscape, the dark and forbidding-looking swamp in which the panther appeared to be roaming seemed to the young watchers doubly wild and weird.

Hugh and Neil kept close to the fire, with their guns resting across their knees, ready for any emergency.

At last, toward eleven o'clock, the occasional screams of the panther suddenly ceased, and more than half an hour passed before anything further was heard; then all at once Neil saw a large animal run up a tree and take a cat-like position on a limb about forty feet from the ground. The moonlight fell upon it from such a direction that its outlines were strongly marked against some masses of dark foliage. Neil touched Hugh's arm and whispered: "Yonder it is, see!" and he pointed toward it with his finger.

Hugh's gaze discovered it very quickly. Both boys felt a strange thrill at sight of the beast. They clutched their guns and regarded each other for a moment in silence. Neil was the first to speak.

"Are you afraid, Hugh?" he whispered. "Shall we call Uncle Charley and the rest?"

Hugh caught a meaning in Neil's words not directly expressed by them, and at once he replied:

"No; let's kill the panther ourselves. My gun is loaded with nine buckshot in each barrel."

"So is mine," said Neil. "How many shells have you?"

"Ten," answered Hugh, after counting them.

"I have eight," said Neil.

"Well," asked Hugh, "what do you say?"

"Let's try it by ourselves," was Neil's reply.

"All right."

They both rose and stood for a moment hesitating.

"We must have some plan of action," said Neil.

"Let's slip down close to the tree, take good aim at the beast, fire both barrels at it, and run back here," answered Hugh.

"Thirty-six buckshot ought to kill it," said Neil.

"Why, of course!" exclaimed Hugh.

"We must be sure not to miss," cautioned Neil; "and to aim at its shoulder," he added.

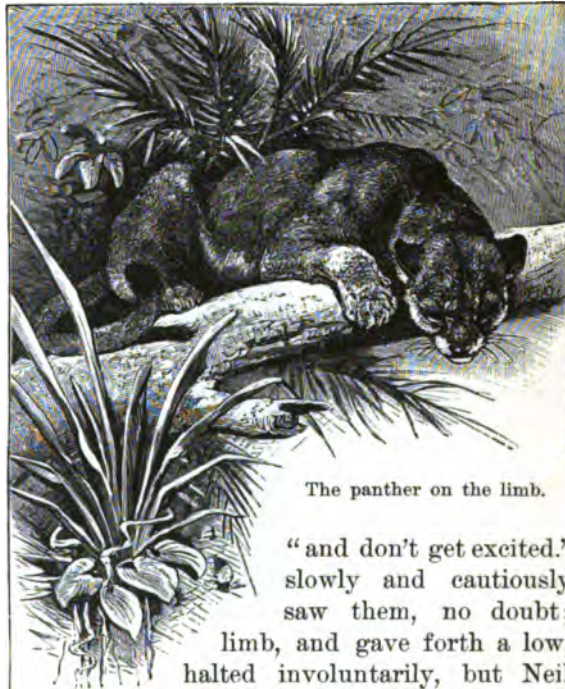
"Yes," answered Hugh. "How proud Uncle Charley will be, if we get that panther's skin!"

The tree, upon a limb of which the panther had stationed itself, was about two hundred yards distant from the fire.

"Come on, now," said Neil,

Side by side the boys walked toward the tree. The panther for it crouched flat on the tremulous scream. Hugh touched his arm and whis-

The panther screamed again almost immediately, this time much louder than before. It required all the courage the boys could command to march straight on toward the ferocious beast; but Neil would never turn back when once he



The panther on the limb.

"and don't get excited." slowly and cautiously saw them, no doubt; limb, and gave forth a low, halted involuntarily, but Neil pered: "Come on."

had started, and Hugh was too proud to abandon his brother in the face of danger. They went on until they were within fifty feet of the tree. The panther had turned its face in their direction, and its eyes glared savagely at them.

"Ready, now!" whispered Neil.

"I'm ready," responded Hugh.

"When I say 'fire,'—blaze away!" added Neil.

"All right," said Hugh.

They raised their guns and aimed as steadily as they could.

"Fire!" exclaimed Neil, and the woods fairly shook with the roar of their guns.



XXIV.

THE PICKETS DRIVEN IN.

WHEN the panther screamed the second time after Neil and Hugh started to attack it, Mr. Marvin awoke, and was surprised to see that the young watchers were not at the fire, where they had been told to stay.

He sprang from his hammock, and slipping on his boots (he had not removed any other part of his attire), he began to look about for the boys. It was a rather startling thought, but it at once rushed into his mind that they had gone on a hunt for the panther! He remembered having heard Hugh propose something of the sort while they were eating supper. He snatched up his rifle, and was on the point of going in search of them, when the four reports of their double shots rang out keen and clear on the still, night air, followed by an angry scream and the sound of scraping and scrambling feet.

Uncle Charley and Mr. Gomez were up and armed in a twinkling. Judge slept on in blissful ignorance of the excitement until they had all left him alone; then, aroused by the shouts, he too, sprang up half awake, and aware that some very exciting event was happening. Catching sight of Hugh, who at that moment rushed up to the fire, the young darkey's frightened fancy imagined that some terrible beast was just behind him; and, snatching up his empty flint-lock, he hurled it frantically forward as the best effort at protection which his scattered wits were capable of making. The gun narrowly missed Hugh, and, as luck would have it, fell plump into the middle of the fire. Both the boys were too frightened to heed it, however, and by the time Judge discovered it and drew it from the fire, the stock of the gun was almost entirely consumed.

Meantime, Mr. Marvin's Winchester rifle cracked sharply, once,—twice,—three times, in quick succession.

"What has become of Neil?" asked Hugh, as he turned about to look for him. But his brother was nowhere to be seen.

After the boys had fired at the panther, as described in the preceding chapter, they stood their ground long enough to see the savage animal come tearing down the tree, apparently badly wounded and infuriated; and then Hugh ran away as fast as he could. Until he reached the fire he had thought that Neil was close at his heels.

And now the voice of Mr. Marvin, calling to Uncle Charley and Mr. Gomez, announced that the panther had been killed. Hugh, all excitement, hurried back to the spot. The panther was lying dead not more than two rods from the

tree, and the three men were standing around it. It was a huge beast, with massive, muscular legs and a long, lithe body. Its head was like a cat's head, and its teeth were long and sharp.

"Where is Neil?" inquired Hugh, suddenly perceiving that his brother was not present.

"Why! Where is he, indeed?" exclaimed Mr. Marvin, looking hurriedly around.

"Has he gone? Is n't he here?" cried Uncle Charley.

"Has n't he been seen?" added Mr. Gomez. "Who saw him last?"

Hugh felt a cold chill of fear and dread creep over him. He gazed anxiously in every direction; the streaks of moonlight and places of dark shade made the wood appear solemn and lonely.

"He was with me when I started to run to camp," said Hugh, "and I have n't seen him since. I thought he turned and ran just as I did."

"You had better call him, sir," suggested Mr. Gomez, speaking to Uncle Charley, who at once cried out: "Neil! Neil!" as loudly as he could.

But no answer came.

Uncle Charley called again. And, this time, they thought they heard an answer, but far away in the swamp.

Mr. Gomez, who had a very strong voice, now called out:

"Ho! Neil!"

"Whoop-e-c!" came the answer, apparently from the very middle of the swamp.

"That's Neil's voice!" exclaimed Hugh.

"But how did he ever get *there*?" demanded Mr. Marvin.

"It is very strange, certainly," said Uncle Charley.

They waited a few minutes, and then called again. The answer came quite promptly and from about the same place. If it was Neil, he had not come any nearer since the former call.

"What can the boy mean? Why does n't he come along?" cried Uncle Charley, growing impatient.

"He does n't seem very far away," said Mr. Marvin.

"He must be lost — bewildered," said Mr. Gomez.

Uncle Charley called again. The answer came precisely as before.

"Well, if he wont come to us we can go to him," exclaimed Mr. Marvin, shouldering his rifle, "who'll go with me?"

"I will," said Hugh promptly.

"The rest of you drag our panther up to the fire," said Mr. Marvin; "Hugh and I will fetch Neil in all right. Come on, Hugh."

Hugh followed Mr. Marvin into the swamp. They made their way slowly and cautiously along through the dark, dense thickets of bushes and vines that grew under the grand live-oaks and water-oaks, stopping now and then to call and get an answer so as to keep the proper direction. They had not gone more than

three or four hundred yards when they suddenly came to the edge of a large pond or lagoon that lay gleaming in the moonlight.

Mr. Marvin stopped and looked puzzled. "How's this?" he ejaculated, as he peered out over the water without being able to discover the other side. "How could he have crossed this pond?"

He called Neil again, and the answer seemed to come from a point just beyond the water, or somewhere out in it, they could not be sure which.

"Where are you, Neil!" shouted Hugh in his shrill, distinct tenor voice.

"Here I am!" returned the answer, and there was no mistake as to its being Neil's voice.

Mr. Marvin tried the water, but found it too deep to wade.

"Ask him how he got there," he said to Hugh.

"How did you get over there?" called Hugh.

"I don't know," Neil yelled back.

"Are you lost?" cried Mr. Marvin.

"Yes!"

"Don't move, then, till I come to you, do you hear?"

"Yes," replied Neil.

"I'll have to go and fetch one of the canvas boats," said Mr. Marvin to Hugh; "can you stay here until I return?"

"Yes, sir," said Hugh, although he was sorely afraid.

"I'll not be gone long, nothing will hurt you, don't get scared. You may keep my rifle with you, I have a pistol." Saying this, Mr. Marvin turned about and started back to the camp fire.

Being left all alone in the midst of so wild and dreary a place was, under the circumstances, a very great trial of Hugh's nerve. Not many a boy of his age would have agreed to stay. But he put Mr. Marvin's rifle down by his side and held his own gun ready for instant use. He felt afraid even to call to Neil, lest a panther might hear him. Any slight sound would make his heart flutter.

When Mr. Marvin had been gone about half an hour something began to move in a little thicket near the water's edge a few yards from where Hugh was crouching. It sounded as if whatever it was had a cat-like way of creeping, for its foot-falls pattered very lightly on the damp leaves. Hugh covered with his aim the point whence the sounds proceeded, and waited for the animal to show itself. This was not long. A queer head with a sharp nose and pointed ears was thrust out of the thicket. Hugh instantly fired at it with both barrels; then casting aside his gun he seized Mr. Marvin's and held it ready without moving out of his place. A scrambling and scuffling sound followed his shots. The head had disappeared.

Nearly an hour passed before Mr. Marvin and Mr. Gomez, accompanied by Uncle Charley and Judge, came with the smallest one of the canvas boats. Upon examination it was found that Hugh had killed a fox.

Mr. Gomez called Neil and got a reply at once. No time was lost. Mr. Marvin put the light boat upon the water, and, getting in, pulled away across the pond.

The rest of the party waited impatiently, and at last saw the boat returning.

Neil could not explain how he came to be where he was found.

"After we had shot at the panther," said he, "I turned and ran toward the fire, which I saw gleaming between



"The panther lay outstretched by the fire."

the trees. I thought Hugh was following close after me, though I did not look back to see. The fire seemed to me to shift its position as I ran, so that I often had to change my course. Presently I discovered that Hugh was not with me. This frightened me, and I ran still harder, thinking I would reach the fire and rouse the rest of you, and if Hugh did not come in immediately we would go out and hunt for him. But just then the fire began to look as if it were zigzagging about, now dancing here, now glimmering there, and I *could* not get any closer to it. I ran over bushes and stumbled against logs. At last I reached the edge of the water, where Mr. Marvin found me, and there I was horrified to see the light I had thought was our fire, hovering above the

surface of the pond, where very soon it flickered and went out, leaving me quite bewildered and lost. I did not know what to do; I felt as if I were in some other and strange world; everything had so mysterious and vague a look about it. The dim moonlight and the ink-black shadows seemed to shift and waver. I was quite exhausted with my long hard run, so I sank down on the ground and gave up. When I heard the shooting, it did not sound as if it *could* be in the direction of our camp, but when you called me I knew your voices."

Hugh was as glad to see his brother as if Neil had returned from some long journey in foreign lands.

They all went back to camp, Hugh not forgetting to carry his fox along, and when they arrived at the fire they found Judge's old gun with its stock burned in two. Of course, the little negro was inconsolable, but the damage could not be repaired. The panther lay outstretched by the fire.

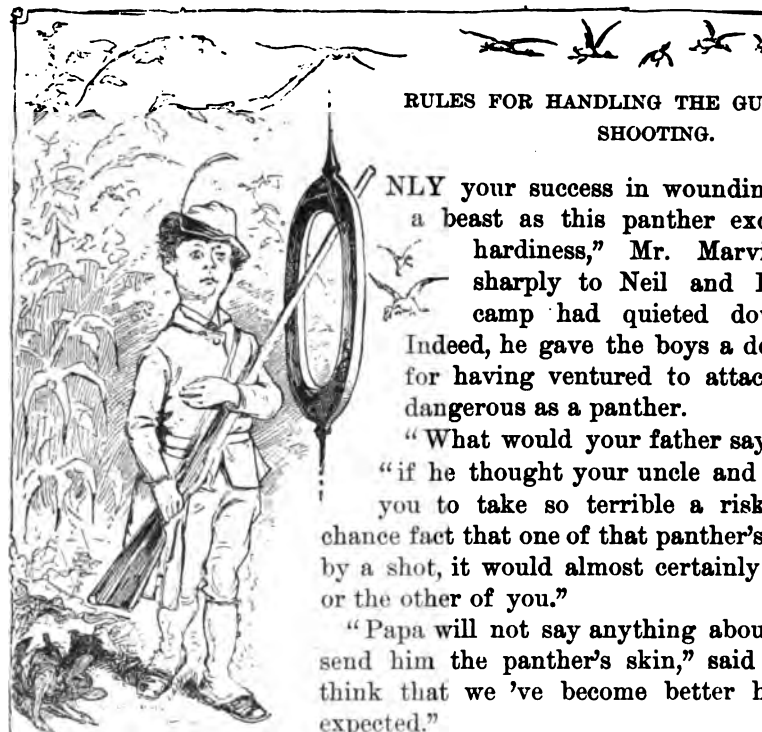
"This big fellow," said Mr. Marvin, touching the dead animal with his foot, "belongs to Neil and Hugh; for, although I finished it, their shots had mortally wounded it."

"That panther was a warrior," said Uncle Charley, "and he charged nobly."

"He druv in de pickets and scattered de scrimmagers," said Judge, grinning lugubriously.

The light that had led Neil astray could only be accounted for on the theory that it was a "Will-o'-the-wisp" or "Jack-o'-lantern," one of those strange, wandering, luminous bubbles sometimes seen in swampy places. It was long popularly supposed that the "Will-o'-the-wisp," or *Ignis fatuus*, was some goblin lure or trap, and many a traveler, led by its dancing light into swamp or bog, as was Neil, has imagined himself tricked by an evil spirit. But science explains the singular light as the spontaneous combustion of an inflammable gas set free from the decaying animal matter that sometimes collects on the surface of a marsh. This "marsh gas" bubbles up through the water and bursts into flame when thus exposed to the air. So Neil was the victim of a practical chemical joke, and had reached the other side of the swamp by running around it, in his pursuit of the flickering light.

XXV.



RULES FOR HANDLING THE GUN IN WING-SHOOTING.

ONLY your success in wounding so dangerous a beast as this panther excuses your foolhardiness," Mr. Marvin said rather sharply to Neil and Hugh after the camp had quieted down once more.

Indeed, he gave the boys a deserved scolding for having ventured to attack an animal so dangerous as a panther.

"What would your father say," he exclaimed, "if he thought your uncle and I would permit you to take so terrible a risk? But for the chance fact that one of that panther's legs was broken by a shot, it would almost certainly have killed one or the other of you."

"Papa will not say anything about that when we send him the panther's skin," said Hugh. "He'll think that we've become better hunters than he expected."

Neil did not say anything. He felt the force of Mr. Marvin's remarks. The startling nature of the adventure, too, had impressed him strongly. Next morning he made a sketch of the panther's head. But he could not draw the Will-o'-the-wisp.

They remained in camp at this spot for several days, during which time they made a fine collection of bird-skins to add to Mr. Marvin's stock. Some excellent shooting, too, they had at wood-duck and teal; but this was quite limited, as they would not kill a single bird that they did not need either for food or as a specimen.

It was during their stay at this delightful place that Neil reduced to the shortest form Mr. Marvin's rules for wing-shooting with a shot-gun. Here they are, just as he wrote them in one of his note-books:



ALWAYS bear in mind that it is the muzzle of the gun that is dangerous; therefore, never allow the muzzle to point toward yourself or any other person.

NEVER put your hand over the muzzle of the gun, nor allow another person to handle the gun while it is loaded.

USE a breech-loading gun with rebounding hammers. A muzzle-loading gun is both inconvenient and dangerous to load.

HAMMERLESS guns are beautiful and convenient weapons, but they are not fit for boys to use, especially boys who are just beginning to shoot.

SIXTEEN-BORE gun with barrels of laminated or Damascus steel, horn or rubber breech-plate, rebounding hammers, and twenty-eight-inch length of barrels, top-snap action, left barrel choke-bored for long range, right barrel medium choke or cylinder bore—such is an outline from which any good gun-maker can build a boy's gun weighing about six and a half pounds.


HELLS for such a gun should be loaded with three drams of powder and one ounce of shot. Put two thick wads on the powder and one on the shot.


FOR any game not larger than a woodcock or a quail, use number nine shot. For wood-duck, prairie-chicken, partridge, teal, and the like, number six shot will be found best when the birds are old; but early in the season number seven will be better. For large water-fowl and wild turkey, number four shot, as a rule, will be heavy enough. For deer, bear, and the like, you ought to have a gun specially bored for shooting buck-shot, as it is sometimes dangerous to use such large shot in choked barrels.


IN shooting at a flying bird, the first thing to know is that you must not aim directly at it unless it is flying straight and level away from you at about the height of your eye.


IF a bird goes away with a rising line of flight your aim must be a little above it, but if it flies level and above the line of your eye straight away, you must aim a little below it. If it flies to the left or to the right, you must


aim a little ahead of it. In fact, the rule is to so fire that the bird's line of flight and the line of your shot exactly intercept each other.


 **ALWAYS** move your gun in the direction of the bird's flight, but do not "poke" or follow. Cover your point of aim by a quick and steady motion and press the trigger at once.


 **HOOT** with both eyes open, so as to see whether you hit or miss. If you miss with your first barrel, recover your aim and fire the other, or if there are two or more birds flushed and you hit with your first barrel, instantly select another bird and fire your second barrel, always shooting right and left.


 **WHEN** a dog "stands", or "points" game, you should not hurry to flush it. Be deliberate, always trying to drive your birds in the direction of light and low covert instead of that which is dense and high.


 **MOST** giddy flying birds, like snipe and plover, will rise against the wind, so that the time to shoot them is just as they turn. To do this, hunt them down the wind if possible.

 **ALWAYS** wait, if the field is open, for your bird to steady itself in the air before you aim. It will generally appear one-third farther from you than it really is. At thirty yards distance the game is most easily killed and the shot will not tear it.


 **IN** hunting quail, and prairie-chicken, send your dog to retrieve the game as soon as it falls, because, if you do not, a wounded bird may run off and be lost, to perish of its hurt. A true hunter is always anxious to prevent unnecessary cruelty. So long as we eat flesh, birds and animals must be killed for food, but we should avoid brutality in putting them to death.


 **SNAP-SHOOTING** is done by raising the gun and firing it as soon as it can be leveled; a mode absolutely necessary in shooting woodcock and quail in high, close covert, where it often happens that the gunner merely gets a glimpse of his game and shoots by judging its position at the time of firing.


 **TEAL** and canvas-back duck are very fast flyers, often going at the rate of sixty-five miles an hour. How far ahead of a green-winged teal, going at that rate across your line of sight, must you aim when the bird is forty yards distant, if your shot fly at the average rate of eight hundred feet per second?


 **CALCULATE** as follows: It takes your shot, practically, one-sixth of a second to go forty yards. In one-sixth of a second your bird will fly, practically, fifteen and one-half feet, which is the distance you must aim ahead of the teal at forty yards. Of course this is not the exact calculation, but it is practically near enough. A few trials will familiarize the operation, and your eye will


soon become trained in judging distances. Perhaps, under ordinary circumstances, at what *appears* to be forty yards, your aim ought to be about ten feet ahead of your bird, if it is flying straight across your line of sight,—and less if the flight is diagonal.


 **If your game** is flying toward you, the best rule is to allow it to pass, so that you may turn about and shoot it going from you. This for several reasons: First, because the breast-feathers, of water-fowl especially, are very thick; secondly, because it is very difficult to allow for the flight of an incoming bird; and thirdly, because in shooting a bird from behind, you send your shot *between* its feathers, and your game is cleanly killed.


 **ALWAYS be sure** that your line of sight is along the middle of the rib that joins the barrels.


 **In quail shooting,** bear in mind that you rarely kill your game at a longer range than thirty yards, and that, under ordinary circumstances, your aim, for a cross-flying bird, should be about three feet ahead of it,—though no fixed rule can be given.


 **If you are hunting** in company with others, be careful and courteous, always refraining from shooting at birds that are flushing nearer to your companion than to you, and do not allow your gun, under any circumstances, to point at, or in the direction of, any human being.


 **NEVER** **pen your gun** at the breech and take out both shells before climbing over a fence, getting into a wagon, going into a house, or handing the gun to a person not used to fire-arms.

 **NEVER** **drag** a gun toward you, with the muzzle foremost.

 **TREAT an unloaded gun** with the same care that you would a loaded one. "I did not know it was loaded" has caused many terrible accidents.

 **It is best to** thoroughly clean and dry a gun after it has been used all day, and when not in use it should be kept in a heavy woolen or leather case.

 **NEVER shoot** at harmless and worthless birds "just to try your hand." Most small birds are pretty, some of them sing sweetly, and nearly all of them are useful as insect-destroyers. It is brutal to kill them for any other than scientific or artistic purposes.

 **WHEN out hunting,** observe everything, so as to remember the minutest details of visible nature. Knowledge thus gathered is invaluable. Boys, when hunting together, should be very cautious in thick covert; as in such places one may be quite near another and not see him.

XXVI.

HOW JUDGE'S NOSE WAS BITTEN.

IT would take a long time and a great deal of writing to tell all that happened during the winter spent by our party in Southern Florida. We can not follow them, step by step, from one good hunting-ground to another.

They tried alligator-shooting, but Neil and Hugh did not like it. The killing of a great,



A pair of art critics.

clumsy, stupid animal; merely to get its teeth, seemed to them very poor sport; and besides, they found alligators much less dangerous than they had been led to believe them to be.

They killed some of the small, beautiful deer of the peninsula, and had some lively times with bear.

Rattlesnakes and moccasins were common in the woods and swamps, and quite frequently the warning whir or hiss startled the boys as they pushed through the brakes of cane and tangles of air-plant.

Neil made rapid progress in his free-hand sketching from nature, both with lead-pencil and in colors. His sketch-books contained a wonderful variety of subjects, from strange insects to wild beasts, and from a small air-plant spike to a huge live-oak tree, draped in long Spanish moss.

Heron-shooting was their principal business, and the amount of plumes collected was very large and valuable.

One day's woodcock-shooting, however, was more to the boys' taste than all the other sport they enjoyed during the whole winter. They found, one morning, a fine lot of these noble game-birds scattered over a thinly wooded tract, where clumps of bushes and tufts of wild grass grew in a rather firm black mud, just suited to the habits of woodcock. They did not need a dog. The birds flew but a short distance when flushed; and, if missed, could be easily followed so as to be found again.

Neil and Hugh endeavored to observe every rule of shooting, and they did remarkably fine work. For a long while they kept exactly even in the number of birds killed, and the race grew very exciting.

It was while absorbed in this sport that Hugh, as he walked through a patch of saw-grass beside a little pool, stepped upon an enormous alligator. It was dead, but, feeling it under his foot, Hugh looked down and received a terrific scare. The reptile was fully twelve feet long, with a great rusty body and sprawling legs, and the hunter who had killed it had propped its terrible mouth open wide, so as to knock out its teeth when it had lain sufficiently long. Hugh jumped as high and as far as he could, and yelled with terror.

"Ugh! Oh! An alligator!" he cried.

Just then a woodcock rose and went straight away, but Hugh was so frightened that he did not think to shoot, and Neil's record went one ahead. The shock of his fright unsettled Hugh's nerves, and so Neil beat him, though the contest was a very close one.

The boys went back to camp for a late dinner, and the sight of their fourteen woodcocks fairly dazzled Judge's eyes. As a special favor, Uncle Charley loaned Judge his little sixteen-bore double-barrel for the rest of the afternoon. This made the young negro very happy. His face shone like a lump of anthracite coal with two black diamonds in it. He took twenty shells and went with the boys when they returned to the woodcock grounds, which lay but a short distance from the camp.

"Now," said Hugh, "here goes for a fair match. Let's see who'll get the biggest bag of birds."

The challenge was quickly accepted by Neil and Judge, and so they began to quarter the ground—that is, they walked across it in diagonal lines back and forth.

Judge was the first to flush a woodcock. It rose from a tuft of low, wild grass and sped away to his left, giving him a very easy shot. He aimed a little ahead and fired, cutting it down in fine style. Marking where his bird fell, he let the breech of his gun fall to the ground and began fumbling for his powder-flask. It was gone. He had forgotten to bring it. Here was a most exasperating piece of ill luck. He picked up his bird, hastily stuffed it into his bag, and turned to hurry to camp after his flask. In doing so he flushed another woodcock, but, having no ammunition and no load in his gun, he could not shoot. The bird went straight past Hugh, who killed it easily.

"Where are you going?" inquired Neil, as the exasperated darkey was hurrying by him.

"Gwine after my powder-flask; done forgot it an' lef' it at de camp," said Judge rather spitefully.

"Why, what do you want of your powder-flask?" demanded Neil in a surprised tone.

"How's I gwine load my gun?" responded Judge, still trudging on.

"Who ever heard of loading a breech-loader from a powder-flask?" exclaimed Neil, beginning to laugh.

"Dar now!" cried Judge, stopping short and staring at the gun he held in his hand, "dar now! I fo't I had de ole flint-lock. I done forgot 'bout Mahs' Charley len' me his'n."

The left-hand barrel of the gun was still loaded and cocked.

"An' I jis' stood dar an let Mahs' Hugh kill my oder bird! Guess I done gone 'stracted, anyhow!"

Neil laughed uproariously and called Hugh to join in the joke. Judge looked sheepish and begged them not to tell of him when they should get back to camp.

It was some time before hunting was resumed. This joke on Judge was so funny to the boys that they could hardly stop laughing.

"I 'knowledge dat I been grievin' 'bout dat ole gun gittin' burnt up, an' I 'low hit onsettled my gumption," said Judge, beginning to laugh, too; "dat wus a mighty sweet-shootin' ole gun, an' I hated to see her burnt dat way."

When they began hunting again, Hugh and Judge each had a bird, and Neil none; but the score soon changed, for Neil achieved a feat very rarely accomplished. He made a "double shot" on woodcock, killing the brace in perfect style, right and left. This put him ahead of the others and made the race grow interesting.

Judge next missed a fine strong bird that flew quartering to his right, and Hugh killed it at fifty yards with his left barrel.

This is what sportsmen sometimes call wiping the eye of the one who missed.

"Wiped your eye!" exclaimed Hugh, as he bagged the bird.

"Dis 'ere gun shoot too quick," said Judge; "it make me dodge! I done miss dat bird 'fore I got ready."

The next flush was by Neil, who failed to kill on account of an intervening bush. Hugh banged away and missed also; and so did Judge, who just then stumbled against the nose of the dead alligator and fell sprawling along its rusty back.

"Look out!" shouted Hugh, in a spirit of mischief. "It's an alligator!"

With a piercing shriek, Judge scrambled off on his hands and knees, screaming at the top of his voice. Then he jumped up, and leaving Uncle Charley's



"Judge fell sprawling along its rusty back."

gun lying where he had dropped it when he fell, he started for camp as hard as he could run.

Neil picked up the gun, and seeing that it was growing late, he and Hugh followed after the flying negro.

When they reached camp, Judge was gesticulating and posturing and pointing in a vain effort to relate his terrible adventure to the men. The most realistic part of it was the fact that Judge had actually skinned his nose on the horny hide of the alligator, and persisted in asserting that he had been bitten!

"Dat beas' jis' kep' a-bitin' away, an' I tho't I done clean gone, fo' sho'!" he exclaimed.



XXVII.

HOME AGAIN.

ALL things have an end, and so the time came at last for our little party to bid farewell to Florida.

The trip up the coast to Cedar Keys, and thence to St. Mark's, was performed in a leisurely way, the sloop anchoring for a day or two here and there, the boys seizing every opportunity to make a bag of snipe or shore birds, or to shoot herons for Mr. Marvin.

But the nearer they approached home the more impatient at delay they all became, and it was with a sense of intense relief that they stood finally by the little railroad station at St. Mark's, ready to take the cars for the North, and home! They bade good-bye to Mr. Gomez with regret, for they had learned to like him very much during their long voyage.

At Tallahassee they took the dogs aboard. Don and Belt and Snip and Sly wriggled all over with happiness to be with their masters once again. They had been well kept however, and were as sleek as moles.

From Tallahassee Mr. Marvin shipped his plumes to New York, and his birdskins to the Smithsonian Institute. He received orders here also, for it was now quite late in April, and the season for nest-hunting and egg-collecting was at hand, and some of his customers and patrons desired him to begin work for them in that line at once. So he had no time to lose. He could not even go so far as Uncle Charley's farm with Neil and Hugh, but had to part from them at Montgomery, Alabama, whence he went westward.

The boys both cried when Mr. Marvin left. He had seemed to them almost like an elder brother. But he promised to come and have a grouse-hunt with them in Illinois some time during the next season.

Samson was overjoyed when they reached Uncle Charley's home, and he asked hundreds of questions; and Judge told him some wonderful stories, that made his old eyes stare.

Neil and Hugh were now in a great hurry to return to Belair and see their father and talk with the boys. The very next day they left Tennessee, and in due time stepped off the train at the Belair station platform. Everything looked familiar and natural, and strange to say, the first person Hugh saw was Tom Dale! "Why, Tom, I thought you were dead!" he cried, running to him.

"Hello! Is this you, Hugh? and if there is n't old Neil! Why, how brown you are, boys! and what a jolly time you must have had!" Tom cried, in an ecstasy of delight.

"But I thought you were drowned?" said Neil; "I saw it in the paper, and papa wrote us that you ——"

"Oh, they were too fast," exclaimed Tom, "I came to and got over it. I guess I *was* dead for a day or two, though. It was a close shave! The doctors gave me up, and all that." Tom's face grew sober enough as he spoke.

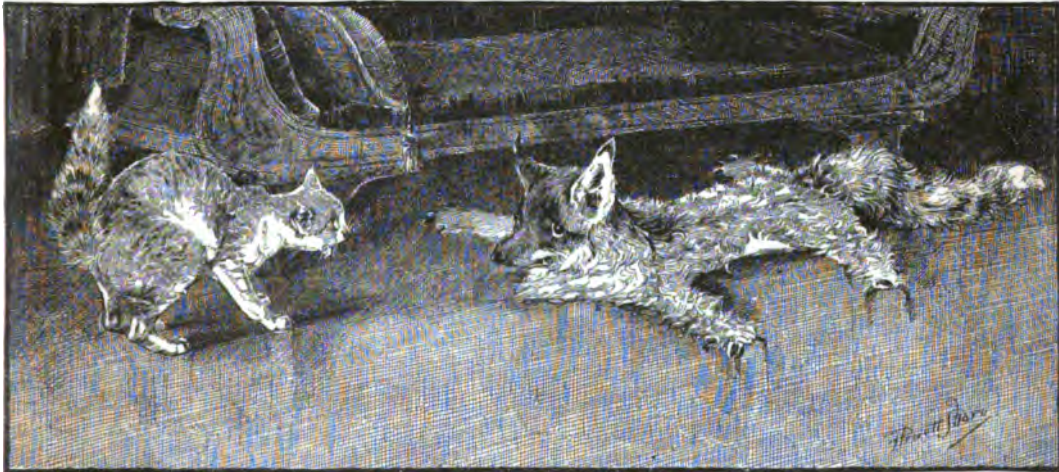
The failure of a package of letters and papers to reach them at Punta Rassa, had kept Neil and Hugh in the dark as to Tom's recovery. The first account of the accident was the only one that they had received.

The news of the return of the boy hunters rapidly spread through Belair. Tom Dale was quite a hero, simply because he had been the first to see and talk with them.

Neil and Hugh jumped into a carriage and were driven straight home, while their "plunder" and luggage followed them in the village express wagon.

Mr. Burton was taken quite by surprise when his boys, all weather-browned and lusty, rushed into the library and fell upon him with their rousing caresses. They almost tumbled him out of his chair; his spectacles fell off, and his face was covered with kisses.

Of course the boys immediately began to tell him all about their wanderings and adventures, but it was many days before they had finished.



One of Hugh's trophies.

Neil proposed to invite all their young friends to come to spend an evening with them, so that they might have a good time talking together over what had happened in Belair, as well as what had been done in the far Southern hunting-grounds, during the winter.

"That is just the thing," said Hugh, "and we'll hang up all your pictures and sketches in the parlor, and set up our stuffed birds, and display our collection of eggs. In fact, we'll have a genuine — what do you call it in French? — *salon*?"

"That would be interesting," assented Neil. "I think all the boys and girls would enjoy it. Suppose we do it?"

"Shall we invite the girls, too?" inquired Hugh.

"Certainly," said Neil; "girls like *fine* art quite as much as boys, you know."

He emphasized the word "*fine*" as if he meant to make fun of his sketches, but Hugh knew he was proud of them.

"What do you say, Papa?" said Hugh, turning to his father.

"I think the plan an excellent one," replied Mr. Burton. "I'll see that your guests have a good supper and the freedom of the house from six to eleven in the evening."

The boys were delighted, and went to work with a will. Mr. Burton's large parlor was profusely decorated with Neil's sketches and the many trophies of the two lads' prowess with the gun. More than fifty guests were present, and every one declared it to be the happiest social event ever enjoyed by the boys and girls of Belair.





HINTS ON TRAP-SHOOTING.

BY MAURICE THOMPSON.

CERTAINLY those who have read with care all the preceding chapters of "Marvin and His Boy Hunters," should by this time have become quite well grounded in the general theory of field shooting with the modern fowling-piece—the double-barreled shot-gun. But there is a branch of shooting, giving most excellent training to the eye and hand, which may be here described for the benefit of those boys who may some day desire to become members of a gentleman's gun-club.

Shooting at glass balls or at the brittle clay pigeons, thrown from a spring-trap, has happily superseded the barbarous custom of using live birds for the purposes of practice. For years there has been growing among refined gentlemen a sentiment against the killing of any bird or other animal merely as a test of skill with any weapon. Trap-shooting, however, furnishes sport of a most excellent kind, especially where game is not to be found; and now that glass balls and clay saucers, called clay pigeons, have been substituted for the live birds formerly used, it may be safely recommended if conducted strictly as a sport, and not debased into a sporting vehicle for the ungentlemanly habit of betting and for the tricks of gamblers.

The trap used in shot-gun practice is made with a spring lever which throws into the air, to be shot at, a "clay pigeon" or a hollow glass ball. The shooter usually stands at from eighteen yards to thirty-one yards distance from the trap. At an agreed signal from the shooter a person employed for that purpose springs the trap, and the ball or clay pigeon is shot at while whirling swiftly

through the air. The surface presented by these missile targets is quite small, and consequently a very close-choked gun is required in trap-shooting.

There can be no doubt that the growing popularity of glass-ball and pigeon-shooting in Europe and America has done a great deal for the improvement of guns. Gentlemen of wealth and high intelligence have discovered how much of amusement and recreation is to be derived from the traps and have seen the inefficiency of the old style of boring gun-barrels. This has led to a system of experiments which has brought to its present state of perfection the method (or rather methods) of choke-boring.

It has been ascertained by accurate trials that the best system of choke-boring will very nearly if not quite double the effect of the larger gauge of guns at from forty to forty-five yards range. Guns of from 16 to 20-gauge are probably less improved by the operation. A 16-gauge gun I have found admirably suited to all but the heaviest shooting, when bored as follows: Right-hand barrel modified choke, left-hand barrel full choke.

It is a singular fact that choke-bored barrels rarely shoot number seven shot well. The reason for this has never been satisfactorily explained. The assertion has also been made that this criticism, to a certain degree applies to all the odd numbers of shot, but I have not been able to verify this.

In shooting at flying balls or clay pigeons, especially where the trap is so set that the object flies "from the shooter," that is, in a direction away from him, the shot must be made quickly or the gun must concentrate its shot in the highest degree, to insure a successful hit; for the strength of the trap-spring is such that the object flies very rapidly for the space of a second and a half at the start.

The glass and clay of which missile targets are made can not be successfully broken by anything smaller than number eight shot, and as number seven shot rarely pattern well in a choked barrel, I advise the use of number six. Here, however arises another difficulty. A well-choked gun may fail to pattern number six shot well. It is, therefore, of the first importance for the owner of a gun to find out by careful target-trials, first, what sized charge best suits the barrels, and second, what sized shot his gun will pattern best.* These trials should be made at a white-paper target at forty yards range. If the gun can not be made to closely pattern either of the sizes six and seven, then it will not be a first-class trap-gun, for number eight is too light a size and number five does not give a sufficient number of pellets to the load. I admit that I have seen some fine shooting done at clay pigeons with number eight shot, but such performances are the exception, and not the rule. The fact still remains that number eight pellets must be sped with enormous force to do the

* All these terms, "choke-bored," "pattern," etc., were fully explained in the story of "Marvin and His Boy Hunters."

execution required, and the excessive recoil and the great weight of gun-metal required, are fatal objections when the shooter is not an athlete. The perfect theory of trap-shooting is that whenever the shooter correctly delivers his shot, the missile target should be hit and broken. This theory requires a gun that will so closely pattern its shot and send them with such force that the object shot at will be hit hard enough and with a sufficient number of pellets to break it; all this, too, without an over-weight of gun or any hurtful recoil.

Trap-shooting, viewed from the point of view of honorable sport,—mere friendly and innocent competition with guns,—ought not to partake of the character of a trial in physical brute endurance. It should be a test of skill; that and that alone. It is no proof that one man is a better shot than another because he is physically better able to stand the recoil of a ten-gauge gun and six drams of powder! In a fair contest where skill is the winning element, all guns and charges should be alike in weight, gauge, and measurement.

One great good comes of intelligent practice at missile or fixed targets, viz.: It soon convinces the young sportsman of the folly of over-loading his gun, one of the most dangerous of experiments. He quickly finds out that his gun performs best with a certain amount of powder and a fixed quantity of shot, and that to use any more or any less will weaken the effect.

Then, too, gun-clubs have certain rules governing shooting which tend to encourage correct habits in handling the gun.

The following rules for testing the shooting value of a gun for trap purposes should prove of practical benefit:

Procure some clay pigeons and suspend one with its edge turned toward the point from which you intend to shoot. Close behind the pigeon spread a three-foot white-paper target. You are now ready to test your gun at any fixed distance. Pace off about forty yards. Now, in looking at your target from this distance you see the clay pigeon hanging with its *smallest* dimensions exposed against a white background. Take deliberate aim at the pigeon and fire. If you break it the indications are strong that your gun is a good one; but carefully examine the pattern of the shot on the paper target, for it may have been a stray pellet that broke the pigeon. Many trials of this kind with different amounts, and sizes of shot and varying charges of powder, will enable you to ascertain two most important things at once: the best charge and the most effective size of shot, as well as the best power of your gun at the least exposure of the missile target.

What is called "double-bird" practice at the traps is, perhaps, the best possible for training one's eyes and hands. In this performance two traps are sprung at once. They are usually placed about five yards apart, so that the two missiles will not interfere with each other in their flight. The shooter stands, as a rule, eighteen yards from the trap.

In shooting at a rising missile, the aim must be a little above it. If at a falling missile, the aim must be below it. In cross-shooting, too, the aim must be ahead of the missile. Of course the distance and rapidity of the flying target must be taken into consideration, and nothing but careful practice can disclose the best method of execution. The secret of success lies in so aiming as to have the center of the charge of shot strike the object aimed at; for these central pellets have the greatest force and the best distribution, always provided that your gun is correctly bored.

It is well for the young shooter to bear in mind that hitting a clay pigeon with but one pellet, no matter with what force, will not always break it, or if it do, the fracture may be so slight as not to be observed. This is why a close-shooting gun is quite as necessary as a hard-hitting one for trap purposes.

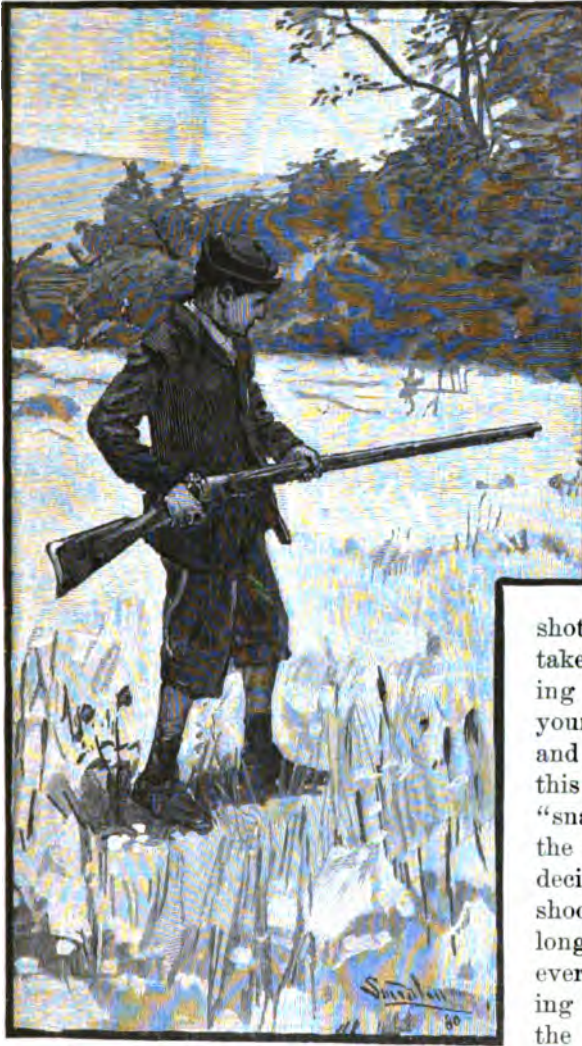
The shooter in taking his stand before the traps must assume such an attitude as will easily balance his whole body and leave his arms free for rapid and facile movements. The weight should rest about equally on the feet, the upper portion of the body slightly inclined forward, the left foot somewhat advanced. The gun should rest lightly in the hollow of the left hand, whilst the right hand firmly grasps the pistol-grip, the forefinger just touching the trigger. In this position the butt of the gun should be below the right elbow, the muzzle pointing upward, and away from the shooter, at an angle of about forty-five degrees with the horizon. This is the position of "Ready." At the command "Pull," given by the shooter, the assistant pulls the string that discharges the trap.

The change from the position, "Ready," to that of firing, involves a movement of the right hand upward and backward, by which the gun, turning in the left hand, as on a pivot, comes to the level of the right eye, its breech or heel-plate settling firmly into the hollow of the right shoulder.

Care should be taken, in bringing the gun to the shoulder, to have the rib (between the barrels) come directly under the right eye and exactly parallel with its line of sight, for a very slight angle between the line of vision and the line of the gun-barrels will destroy the aim.

Both eyes should be kept open in aiming, but the shooter must be certain to always take his aim with his right eye. With some persons this will be difficult, but careful practice will overcome the trouble.

When the trap has been sprung and the missile target thrown into the air, the shooter must fix his eyes quickly and steadily on his aim, that is, the point he wishes to cover with his gun-sight (at the same time raising his gun and carrying it by a single motion to his shoulder so that the barrels will be directed exactly at this point), and fire. It requires long and patient practice to fix one in the habit of mechanically executing the movements of body, hands, and eyes necessary to a successful shot. Of course at the point of firing, three things must be done simultaneously: Fixing the point of aim with the eye, bringing the gun to bear exactly on that point, and pulling the trigger.



The great difference between a calm, steady, swift motion and a hurried one must be thoroughly understood. All the movements of a really well-trained shooter appear to be much slower than they actually are, whilst the jerky motions of a poor shot appear even more rapid and careless than they would if successful.

The young shooter should begin his practice deliberately. He should not try to be quick until after he has learned to be correct. But on the other hand, he must not be content to be a "poke-shot"; that is, he must never take his aim by following the flying object with his gun. Take your aim by a swift, direct motion and fire on the instant! Of course this is the method followed in "snap-shooting" at game-birds, in the field, and is recommended as decidedly the best in all kinds of shooting, save at wild fowls at long range. Its superiority over every other method in trap-shooting is principally that it enables the marksman to hit the missile before it has gone beyond safe

range, for the sooner the target is hit the harder the blow and the greater the number of pellets with which it will be struck.

The observant young shooter will not be long in discovering that to become a "fine shot" he must drill himself until the whole operation of aiming and firing can be done mechanically, without forethought, lagging, hesitation, or hurry, and yet with all the certainty and regularity of the motions of a well-adjusted machine.

I have observed that some of the finest shots in this country (notably Captain Bogardus) get their aim without any perceptible upward or downward motion of the gun after it has been put against the shoulder. Occasionally I have seen Captain Bogardus catch a second aim with surprising quickness when, for some reason, the first has not pleased him, but I have never seen him appear to "poke" after the ball or pigeon.

The forming of gun-clubs in the United States, more than any other influence, has helped toward securing stringent legislation for the preservation of game in the various States and has led to a wide dissemination of much useful knowledge in the field of natural history.



"A student of natural history."

FISHING.

*"Ob! the gallant fisher's life,
It is the best of any;
'T is full of pleasure, void of strife,
And 't is beloved of many."*

IZAAB WALTON.



FLY-FISHING FOR BLACK BASS.

BY MAURICE THOMPSON.

ONE exciting and healthful sport has been enjoyed exclusively by grown-up men ; but I think that boys and girls could enjoy it as well. I speak of fly-fishing, by which is not meant fishing for flies,—a thing not to be classed with good sports,—but angling for fish with artificial flies, a means of outdoor recreation that has been enjoyed by many great and good men for hundreds of years. Of course you must not understand me to mean that any good man ever fished hundreds of years, though Izaak Walton, the most famous of all anglers, was nearly a century old when he died, and he spent much of his long, happy life beside the brooks and rivers, in pursuit of his favorite pastime. He wrote a book called “The Complete Angler,” which, although now more than two hundred years old, is still read and admired by all who enjoy quaint conceits and happy descriptions of outdoor things. George Washington and Daniel Webster, as well as many another of our distinguished men, were very fond of angling.

Now most boys know perfectly well how to fish with rod and line, and I have seen some girls who were quite expert at catching shiners and sun-perch in the small streams of the Middle and Southern States. But of fly-fishing, the genuine angling, boys and girls seem to know almost nothing whatever. I have often wondered at this, for there is no sport more fascinating or more easily attainable.

Fishing-tackle for angling with the fly is very simple and beautiful, and can

be bought of any dealer in sportsmen's goods. A fly-rod, a click-reel, and some twenty or thirty yards of fishing-line are the first things to purchase. With these in hand, you are ready to learn how to "cast,"—an accomplishment you must pretty thoroughly master before you think of going to a brook for trout or black bass.

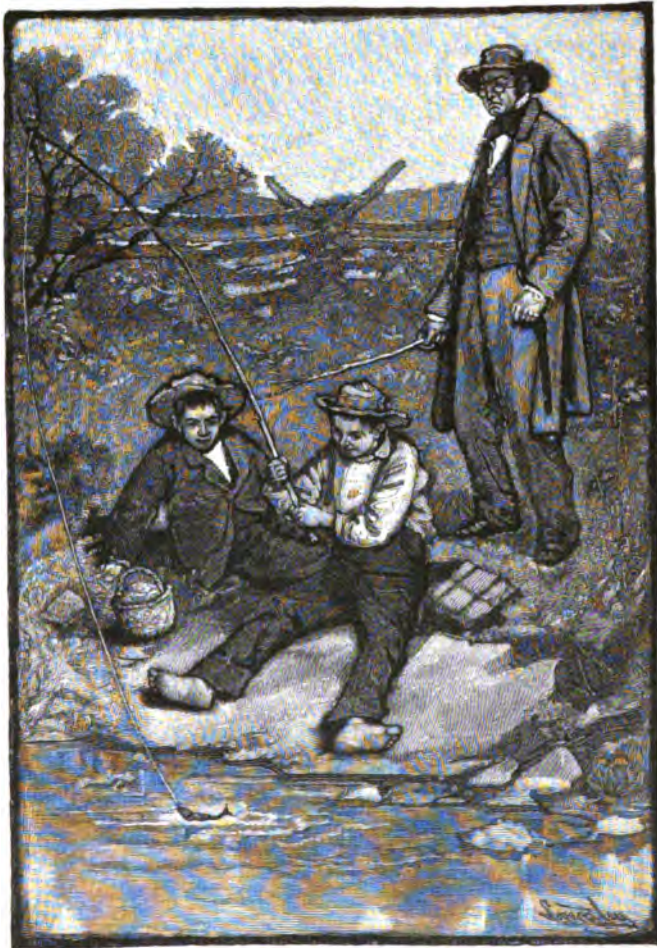
Your fly-rod will usually be made of three pieces, with



"An expert at catching shiners."

socket-joints, so as to be taken apart when not in use. These three pieces are called the butt, the middle-piece, and the tip. The click-reel is to be fastened on the under side of the butt, at the larger extremity, just below the place where the hand must grasp the rod when using it. The line—a slender silk or linen one—is evenly wound upon the reel, with an end free to pass through small brass loops or eyes on the under side of the rod to the extremity of the tip, where it goes through a little ring, whence it may be drawn out as long as you like, or until it is all unwound from the reel—always with the left hand.

Now let us try to cast the line. To do this, as a mere matter of preliminary practice, tie a small weight, say a little block of wood, an inch long and as thick as your little finger, to the free end of your line, which has been drawn out through the tip-ring some eight or nine feet. Now, standing firmly erect in an easy position, take the rod in the right hand, grasping it by the handle just above the reel; with thumb and forefinger of the left hand take light hold of the bit of wood at the line's end. You are now ready for a cast. The rod is nearly vertical and the line is drawn taut. By a motion gradually increasing in rapidity, wave the rod backward over the left shoulder, at the same time loosing the bit of wood and allowing the line to swing straight out behind you. Then, before the wood can touch the ground in your rear, wave the rod, by a gradually quickening motion and with a slight curve to the right, forward, so as to whip the line to the full length that is unwound, straight out before you, allowing the block to settle lightly on the ground. Now, to cast again, wind off a foot more of line, by slipping it from the reel with your left hand, and then, by a gentle sweep of the rod upward and backward, fling the line full length straight behind you, and before it can fall to the ground throw it forward again as in the first cast. Try this over and over, until you get so that you can fling out twelve



"Caught!"

feet of line every time and make your bit of wood drop upon just the spot you aim at. This accomplished, you are ready to begin practice on water with a fly. You must now "rig your cast," as anglers say; that is, you must loop on at the end of your line six feet of heavy "silk-gut," called a stretcher; to this stretcher two flies must be attached by short pieces of the "silk-gut," one at the end of the stretcher and the other two or three feet from the end. The short line by which the fly is attached to the stretcher is called a snell or snood.

Artificial flies are made mostly of feathers, tied upon a hook in such a way as to somewhat resemble some one or another of the insects that sport about the streams in summer. Anglers have discoursed at great length on the subject of flies. Some like white or light-colored flies; others prefer gay feathers, such as ibis, golden pheasant, peacock, woodpecker, and wood-duck; while others still use different flies for different days, and vary the shape and color as the season advances. The making of an artificial fly is technically called "tying the fly," and is so minute and difficult an operation that it is better to buy flies of the dealers than to attempt to tie them yourself.

The angler usually carries a supply of flies in a pocket case called a fly-book.

The fly attached to the end of the stretcher is called the "tail-fly," and the one attached further up is called the "dropper," or "bob-fly."

Now, having "rigged your cast," you may go to the nearest water and practice casting the fly, just as you learned with the bit of wood.

You will find this exercise rather tiresome to the right arm at first, but you can soon overcome every difficulty. In the beginning, you should choose a smooth, open space of water on which to practice, until you can cast well enough to begin angling for game.

Girls can use a fly-rod just as well as boys, and they will find in it a new and delightful means of enjoyment.

When you have thoroughly mastered the method of casting and are ready to go angling, you must dress yourself for the water, for sometimes you may have to wade in the shallow parts of the brook.

Girls should wear short dresses and wading-stockings; the latter are made of rubber cloth, and may be ordered of any dealer in fishing goods. Over these stockings, which are water-proof, shoes must be worn, the older and easier the better.

Boys, as a rule, will not care for these stockings, preferring to roll up their trouser-legs and wade "just so."

Now for the fun!

"But where are any trout brooks?" you inquire.

Trout brooks are rather scarce, it is true, but bass streams are not. The black bass is found in nearly all the brooks and rivers of a large portion of the United States, and it is the gamiest and boldest fish that swims. It will take the fly, if properly offered, more readily than salmon, trout, or grayling.



So, girls and boys, let us go a-fishing for black bass. A good brook or rivulet is close by almost any country house or town. A short drive or walk takes us to where we can hear the bubble and murmur, and see the pure water rippling and gleaming among the shining stones. The big plane-trees, sometimes called sycamore, lean over the brook's current, and there is a woody

fragrance and freshness in the air. Birds sing overhead and round about in the thickets.

We walk cautiously along the brook-side until we find a place where the water is dashing merrily among big stones and whirling in shining circles, frothed with clots of snowy foam. This is a promising place for a cast. Let us try. Give way, boys, and let one of the girls have the first cast. Now! See her take the fly in her left hand, lightly between the thumb and forefinger, her beautiful slender rod held almost vertically in her right hand. She waves the rod back-



"Not so easy, after all."

ward over her left shoulder, at the same time loosing the fly, then she whips the rod forward with a slight whirl to the right, and away spins the fly. But it falls somewhat short. Quickly and deftly she slips a few feet more of line from the reel, gracefully whirls the rod backward again, and, as the line straightens behind her, she casts as before. Again and again she does this, lengthening the line a little at each cast, until, at last, the gay fly falls lightly among the shining waves close by a little whirlpool. Splash! What a fine fish leaps up! You see his scales gleam and his fins flash as he "flips" himself almost bodily above the water and seizes the fly. And what does my little lady with the rod? She quickly "strikes"—that is, she gives a short, sharp jerk with her right hand, and then the fight begins. The rod is bent like a whip; whiz goes the click-reel as the strong fish pulls off yard after yard of the line. Hold him back, quick! Now, as our little girl

changes the rod from her right hand to her left, in order to manage the reel, the fish makes a big lunge and turns a somersault clear out of the water. The hook is an extra good one, or it would have broken under that strain. We all look on with tremulous excitement as the bass falls back again into the swirling

current and begins to dart this way and that, making the line sing and whirl. Now our determined little angler begins to force the fight. She turns the butt of the rod more forward, thus to steadily turn righthand. See most double!



A promising spot.

raising the tip, and begins the reel-crank with her the slender rod bend all—Hurry, boys,—some one

of you,—get the landing-net and be ready to dip up the game! As the line is shortened, the bass is drawn nearer and nearer to the grassy bank. There! his prickly dorsal fin cuts the water! Now get the landing-net under him. Good! he is ours, and he weighs a full pound and a quarter. That was a well-managed campaign on the part of our young lady. Which one of the boys can beat it?

You may think that it would be a very easy task to manage a fish weighing no more than a pound and a half; but when a live and stubborn bass of that size is at the end of ten or twelve yards of line, and your rod is as limber as a whip, the thing is n't so easy, after all. I have seen grown men fail in the undertaking.

One of the most difficult things in fly-fishing is to get your fly to fall just where you wish it to. It requires no little skill to be able to cast out twenty feet of line and make your gaudy insect drop exactly where you aim. Sometimes bass are very stupid, or very cunning, or not very hungry, or lazy, for they will balance themselves in a clear current, with their heads up-stream, and no matter how cleverly you present your fly, not a rise will they make. At other times, they will take your fly as fast as you can offer it.

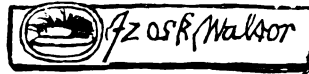
One day, some years ago, I was casting in a narrow, weedy stream in the South, and was trying to make my fly fall upon a small pool near the opposite bank, when it went a little too far and settled in a tuft of grass. No sooner had it touched than something grabbed it savagely, and, when I reeled in my line, I found that I had caught a bull-frog!

In fly-fishing for bass, you find the streams more easily approached than trout brooks, and there is less in your way when casting. In fact, I can say with confidence to all of the girl and boy fly-fishers, that they could not wish for better sport than they can get from fly-angling in almost any of

our larger brooks, when once the secret of the gentle art is discovered by them. It seems strange that even enthusiastic anglers are just beginning to find out the great merits of the black bass as a game fish to be taken with the fly. All these years men have been making long journeys to Canada and to northern Michigan for trout and salmon, when the streams that flow through every county of nearly all our States are teeming with bass gamer than salmon and more voracious than trout!

Bass brooks, as a rule, are shallow, so that there is little danger of drowning in them, and you can wade where you please. Some girls may think angling is too much like boys' sport for them; but if they will try it once, some sweet June day, they will change their minds. There is a great deal more fun in wading a clear, running brook, than in wallowing in the surf of the sea; and then, if you get a big bass, he gives you excitement that makes the blood leap in your veins.

Some very good and tender-hearted people think of angling as a most cruel and wicked sport. I can not decide this matter for any one but myself. If you are afraid that killing fish is wicked, don't angle, for a timid angler never gets a rise, or, if he does, he strikes too feebly or too late to get the game. To succeed at fly-fishing, one must go at it with a clear conscience and a steady nerve. Be sure you are right, and then don't let the fish get away — that is my rule!



FLY-FISHING FOR TROUT.

BY RIPLEY HITCHCOCK.

THERE was once a boy who thought that he could choose his birthday present more wisely than could his father or mother. He wanted an "arrow rifle" — a useless affair which has long since gone to the place where toys which are failures go. He was disappointed, however. His birthday brought him not an "arrow rifle," but a light, jointed fishing-rod. Now this boy had already done some fishing with a heavy bamboo pole, or with one cut from an alder, jerking the fish out of the water, and swinging them over his head. To be sure the heavy pole made his arms ache, but his new rod, which bent at every touch, seemed to him too slender and flimsy to be of any use whatever.

I fear he was not very grateful at first, but he was properly rebuked when his father took a day from professional cares, and opened the lad's eyes to the pleasure of fishing with light tackle. When he had learned to "cast" flies with his elastic but strong rod, without hooking somebody or something not meant to be hooked; when he had seen the beautiful vermilion-spotted trout flash clear of the water, tempted by the flies; and when he had found that he could tire out and land larger fish than he had ever caught before, simply by pitting against their cunning and strength, skill and patience instead of mere brute force — then there was opened to that boy a new world of sport and healthy recreation. He has never regretted the "arrow rifle"; and he now proposes to tell the boys as well as the girls how to obtain something which is within the reach of both,—the greatest possible pleasure from fishing.

If one could take a bird's-eye view of our country at any time in the summer, he would see boys and girls catching all kinds of fish in all kinds of ways; some off the coast in sail-boats, tugging at bluefish or mackerel, others black-bass fishing, some "skittering" for pickerel in New England lakes, others trolling for pike in the lakes and rivers of the West. But of all the fresh-water

game fish there is none more beautiful and graceful or more active than the trout.

Any New York boy who has never caught a trout should go down to Fulton Market at the opening of the trout season when the trout are gathered there from all parts of the country. He will see "rainbow" trout from the Rocky Mountains, their sides iridescent, and stained as if marked by a bloody finger.



Rainbow trout.

These are being introduced into Eastern waters. He will find trout in the blackest of mourning robes and others gayly dressed in silver tinsel. Sometimes the vermilion spots on the sides shine like fire; again they are as dull as if the fire had gone out and left only

gray ashes. For there are several varieties of trout known to naturalists and traveled fishermen, and even the brook trout, called by the formidable name of *Salmo fontinalis*, varies greatly in color and shape in different localities. In Arizona, I have caught trout which were fairly black. In Dublin Lake in New Hampshire, the trout look like bars of polished silver as they are drawn up through the water. I never saw a more sharply marked contrast than that between the trout of two little Maine lakes, near the head-waters of the Androscoggin River. In one, the trout were long, and as thin as race-horses, and their flesh was of a salmon-pink hue; in the other, not half a mile away, the trout were short, thick, and almost hump-backed, with darker skins and lighter flesh; the first lake had a sandy, gravelly bottom, and the water was clear as crystal; the bottom of the second was muddy, and the water dark and turbid. This explained the difference in the fish, a difference always existing in trout of brooks or lakes under the same conditions. In the great Androscoggin Lakes of Maine, the trout, which are brook trout, grow to the largest size known anywhere. They have been caught weighing twelve pounds, and many claimed that they were lake trout, until the famous naturalist Agassiz decided that, although living in lakes, they were true brook trout. These immense trout have very thick bodies and cruel hooked jaws; but the guides can point out many points of contrast between trout from different lakes, or even from different parts of the same lake. There are trout nearly as large in the rivers of the British Provinces, Nova Scotia, New Brunswick, and Quebec, but these are usually lighter colored, and they are quite another variety, being known as sea-trout, or *Salmo trutta*. All this adds to the interest of trout-fishing by inducing the angler to acquaint himself with what the Natural Histories have to tell him about the various kinds of trout. Then the differences in one kind teach him to be observant and excite a curiosity as to the habits of the trout. Here the Natural Histories will fail him. Only

by following trout brooks and tempting the larger trout of lakes, can he properly study the ways and curious moods of this cunning, timid fish. And even then, if he be modest, he will often confess himself sadly puzzled; for the trout's wits are sometimes more than a match for the fisherman's. And this adds to the pleasure of trout-fishing; for if one had to deal with a fish which would bite at any bait, under any circumstances, and give up the fight as soon as hooked, the sport would soon grow very stupid. In trout-fishing, one will study the best conditions of wind, weather, and water, and learn how to approach one of the shyest of fish, how to delude one of the most wary, and how safely to land one of the pluckiest. To do this it is necessary to have reliable "tackle," a term which includes rod, reel, line, leaders, flies, and landing-net. The rod must be so light that one can cast with it easily and persistently, and yet it must be strong enough to bend into all manner of curves without breaking, and to tire out large trout. If it is too stiff, the fisherman's arm will soon be wearied, and if it is too flexible or withy, it will not cast flies well, and it will not hold fish firmly if the angler needs to bring a strain upon them. In attempts to meet these requirements, fly rods have been made of split bamboo, ash and lance-wood, bethabara, greenheart, cedar, hickory, hornbeam, iron-wood, snake-wood, shad-blow and perhaps twenty other woods, and there have even been experiments in making rods of thin steel tubes. The split bamboo rods are made of four or six triangular strips cut from the rind of Calcutta bamboo and carefully fitted and glued together. Sometimes the surface is rounded, but oftener it has six sides. These rods, when they are really good, are the best of all. Indeed, Americans may justly claim to make the finest rods in the world and also the finest lines. But I should not advise any of my readers to buy a split bamboo fly rod, because these rods are very expensive, they require very careful treatment, and if broken they must go back to the maker to be repaired. The fly rod which I recommend to the boys and girls is one with an ash butt, and the second joint and tip of lance-wood. It should be from ten feet to ten feet and a half in length, and should weigh about seven ounces and a half.



Rangeley Lake trout.

Such a rod can be obtained from any reliable dealer in any large city. I emphasize "reliable" because there are fishing-tackle stores where one may get rods nice to look at, but worthless to use. Nearly all dealers keep what is called an "all-around" rod, intended to be used for either fly or bait fishing, but this, like most compromises, is usually unsatisfactory. This, or something like it, will probably be shown you if you ask for a boy's rod, so that it is better to tell the dealer or rod-maker exactly what you want, and accept nothing else. If he takes a pride

in his work and has a reputation to sustain, he will interest himself in picking out a rod of sound, well-seasoned wood, evenly balanced, elastic, with a good action, and a peculiar "kick" in the second joint, which is of great service in casting a fly. If some one can help you in making your choice, so much the better. Then it will be well to attach a reel and line to the rod and try it in actual casting, if this is possible; and when the rod is bent, see that the bend is an even curve. The pleasure of fly-fishing depends upon the quality of the rod, and the choice should therefore be made deliberately and wisely. Some fishermen make their own rods, and there are dealers who supply materials for amateur rod-makers; but this is a difficult undertaking and can not be described here. I should advise any boy to go to a professional maker for his first fly rod.

The "enameled water-proof" lines are the best. These are braided from boiled silk, and prepared to resist the action of water, which will cause the decay of an ordinary line. Of the various sizes, which are distinguished by letters, that known as F is most desirable, although either E or F will answer the purpose. The line should be "level," not tapering, and at least twenty-five yards in length. This will be wound upon a "click" reel of equal capacity, preferably nickel-plated. But this is of less importance than the internal construction of the reel, for which you should have the maker's guarantee. Now come the flies. There are names enough to fill a directory, and a greater variety of colors than the woods show in autumn. A few flies like the "Montreal," "Professor," "Scarlet Ibis," "Coachman," and the "Hackles" are to be found in almost every angler's book. For the rest, it will be well to learn, from some experienced angler or intelligent dealer, the flies best suited to the particular waters which you intend to fish. At the Rangeley Lakes, for example, you will find that large, gaudy flies are much used, like the "Parmachene Belle," "Silver" and "Golden Doctor," and "Grizzly King," and there is one local fly called the "Katoodle Bug." In the Adirondacks, smaller flies of quieter colors are favored. For brook-fishing, very small flies of neutral tints are much used, except when the water is very dark. A fly-book will be needed to contain flies and also leaders. The leader is a piece of "silk-worm gut," which should be about six feet in length. One end is fastened to the line, and the stretcher-fly is made fast at the other. One or two other flies, called droppers, are usually attached at intervals of two feet or more along the leader. Before making your choice, the leaders should be closely examined to see whether any part is frayed or cracked. They can be tested by a pull of four or five pounds on a spring balance. The leader is used as being less conspicuous than the line in the water, and, therefore, less likely to frighten away trout approaching the flies. Most leaders are dyed a misty bluish color which, it is thought, will escape even the keen eyes of the trout. A landing-net, the size and strength of which depend upon the fishing-ground, completes the list of tackle.

The next step is to learn how to cast a fly, and here practice and the advice of some experienced fly-fisherman will be worth more than printed instructions.



Young anglers.

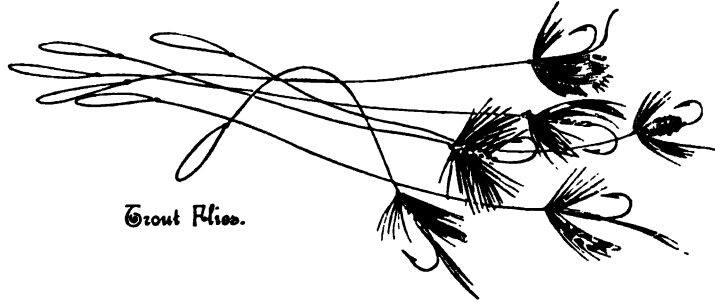
It is not necessary to wait for summer nor for access to water, in order to practice fly-casting. A housetop, a dooryard, or the spacious floor of an old-fashioned barn, as the case may be, offers just as good a chance for practice as a lake or river. When the rod is jointed together, the reel attached, and the line passed through the rings and beyond the tip about the length of the rod, the learner is usually seized with a wild desire to flourish rod and line like a whip with a long snapper. This feeling must promptly be suppressed. Fly-casting is a very simple movement, and not a flourish. The elbow is kept down at the side, the fore arm moving only a little, and most of the work is done by the wrist. Holding the rod by the "grip," the part of the butt wound with silk or rattan to assist the grasp, one finds that the reel, which is just below the "grip," aids in balancing the rod. The reel is underneath in casting. After hooking a fish, many anglers turn their rods so as to bring the reel to the upper side, thus letting the strain of the line come upon the rod itself instead of upon the rings. In holding the "grip" the thumb should be extended straight along the rod, as this gives an additional "purchase." For the first cast take the end

of the line in the left hand, and bring the rod upward and backward until the line is taut. As you release the line the spring of the rod carries the line backward. This is the back cast. Then comes an instant's pause, while the line straightens itself out behind, and then, with a firm motion of the wrist, helped a little by the fore arm, the rod is thrown forward, and the line flies easily out in front. Begin with a line once-and-a-half as long as the rod, and lengthen it out by degrees. The main points to be remembered are: to keep the elbow at the side, to train the wrist, to move the rod not too far forward or back, always to wait until the line is straight back cast, and to make sure that in this the line falls no lower than your head; this last will take time to accomplish. There is no more awkward fault than that of whipping a rod down to a level with the horizon before and behind, and swishing the flies through the air until some of them are snapped off.

When the learner becomes accustomed to handling his rod, he must try to perfect himself in two matters of great importance — accuracy and delicacy. Place a small piece of paper fifteen or twenty feet away, and aim at making the knot in the end of the line fall easily and quietly upon you raise the point of the impulse of the line is ened in the air for an instant in front. This is a novel kind of target-shooting, but its usefulness will be realized when the angler finds it necessary to drop his flies so lightly just over the head of some particularly wary trout, that the fish, although too shy or lazy to move a yard, will be persuaded that some tempting flies have foolishly settled on the water just within this kind, exercise in reach of his jaws. By practice in very fas- which is an excellent form of light cinating art. It is not necessary to make very long casts. At fly-casting tournaments in Central Park, casts have been made of about ninety feet, but in fishing a third of that distance is sufficient. Never cast more line than you can conveniently and safely handle.



And now that we are ready to go a-fishing, the question arises, "Where shall we go?" The cold, bitter weather common in early April is not favorable to fishermen or fish. When May sunshine brings the leaves out on the trees, and fields are green and skies are blue, then Long Island may well tempt any New York boy who has a holiday to spend in fly-fishing. Years ago, any Long Island water could be



Trout Fly.

fished without question, but now nearly all the Long Island brooks and ponds are "preserved,"—that is, kept for personal use by clubs or private owners. A boy who has friend or relative among the owners of these preserves, or can hire a fishing privilege, can enjoy trout-fishing within a journey of two or three hours from his New York home. Within a few hours' ride, also, are trout streams in the southern counties of New York State and in Pennsylvania, although the former are so often visited that the fish have scarcely time to grow to the proper size. The New England boy finds trout brooks in western Connecticut, in northern Massachusetts, and in the Cape Cod region, in northern New Hampshire and Vermont, and especially in Maine. Once, almost every stream and lake in New England contained trout. But forests were cut down, and some of the streams dwindled until they went dry in summer. Saw-mills were built, the streams were dammed up so as to be impassable for trout, and the trout eggs were buried under sawdust. Manufactories have poisoned the water of some rivers, and others have been literally "fished dry." The trout of any brook near a large New England town have a very poor chance of long life. All this is discouraging enough, but yet there are trout to be caught, as every New England boy knows. The most famous fishing-places in the East are the Rangeley Lakes in Maine and the Adirondacks in New York. About the third week in May the ice goes out of the great chain of lakes forming the head-waters of the Androscoggin River in Maine. Then the red-shirted river-drivers come down with "drives" of logs, which dash through the sluiceways of immense dams between the different lakes. And while the brown pine trunks are still shooting through the dams, fishermen begin to gather from all parts of the country, for in the clear cold water of these lakes the trout, feeding upon myriads of minnows, grow to be the giants of their race.

If one can continue farther into the North-east, better fishing can be found in New Brunswick and Quebec than in Maine, although the trout of the Provinces

are sea trout, a distinction which does not seem to me important. The trout of the Adirondacks are much smaller than those of Maine or New Brunswick, and now that the Adirondack country is overrun with visitors, one must go back some distance into the woods to find good sport. South of Pennsylvania, there is trout fishing in the mountain streams of West Virginia and North Carolina. To the west, northern Michigan tempts the angler, and still farther north are the large trout of the Nepigon River which flows into Lake Superior. The States along the Mississippi Valley are sadly deficient in trout, but a great deal can be done with black bass, as Mr. Maurice Thompson has told you. Trout abound all along the Rocky Mountains. There are the lusty five-pounders of the Snake River in Idaho, the rainbow trout of California, found also, I think, in Colorado, and the dusky fish of New Mexico and Arizona.

The best month for fly-fishing is June, and the best weather a light southerly or south-westerly breeze and a slightly overcast sky. Morning or evening is the best time. The worst is the middle of an intensely hot, bright, still day. It is usually thought that a change in the weather makes trout more active. Very high or very low water is undesirable. Yet when all the conditions seem perfect, one may cast over a whole school of trout without inducing them to stir a fin; and on the other hand, when the weather is most unfavorable and when the fish are gorged with food, they will, sometimes, fairly hustle one another in their eagerness to get the flies. On one hot July noon, the air and water around my boat were alive with trout for half an hour, when they stopped rising as suddenly as they had begun, without any apparent reason in one case or the other. Within two forenoon hours, I once caught twenty-five pounds of trout at the mouth of a brook emptying into one of the Rangeley lakes. Early next morning, I was rowed to the same spot, and found only one solitary trout. Trout are very fickle and changeable, and the ingenuity sometimes required to coax them to rise adds as much zest to the sport as the suspense and excitement of hooking and landing them.

But when the trout does rise, what do you suppose he thinks? Does he really believe that the curious creature with a barbed tail hovering over his head is a natural fly? I doubt it. The flies ordinarily used would drive an entomologist to distraction. The great scarlet and white and yellow flies which have caused so many Rangeley lake trout to come to grief are, I fancy, unlike any living insect in that region, or anywhere else. The trout sees something moving on the water, and as experience has taught him that such fluttering objects are usually good to eat, his weakness for live food tempts him to pounce upon it without stopping to reason out the matter. But when he finds that this deceitful fly is entirely tasteless, he will drop it at once, unless the fisherman is prompt in "striking." This means a quick upward movement of the tip of the rod, a motion imparted, of course, at the butt, but communicated along rod and line; this movement strikes the hook into the fish. One can not be too quick in strik-



One of the giants.

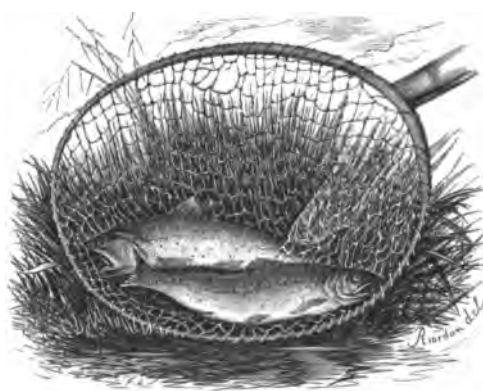
ing, but if too much force be used, the rod may be snapped at the second joint. Yet that is not the way in which rods are most frequently broken. If you have drawn in your flies so close that you can not readily recover them, and your rod is pointing nearly straight upward, even a gentle attempt to strike a small fish is likely to break a rod. Once, I cast with a heavy rod from a raft which was drifting across a Canadian lake. The wind was so strong that I was obliged to cast with it, and then the raft rapidly drifted down upon my flies. A trout weighing not a quarter of a pound rose when my rod was nearly perpendicular, and the flies were close before me; instinctively I struck. The reward of my carelessness was that the rod, which would have landed a ten-pound fish, was cleanly broken into two pieces. Never draw the flies so near to you that you have not safe and complete control of your rod, either for the back-cast or for the strike.

The importance of the high back-cast of which I have spoken will be fully appreciated by the majority of my boy and girl readers, for most of their trout-fishing will probably be done upon brooks where a low back-cast would involve entanglement in grass or bushes. In brook-fishing it is usually necessary to use a comparatively short line, and one must learn to make under-hand casts; that is, with the rod down to a horizontal level on either side, instead of being upright, something easily learned after one can cast properly over-hand. Of course my readers will see that they must keep themselves and their shadows out of the sight of the timid trout. When a fish is hooked, let him run out the reel if he is large enough, unless he makes for stumps or brush where the

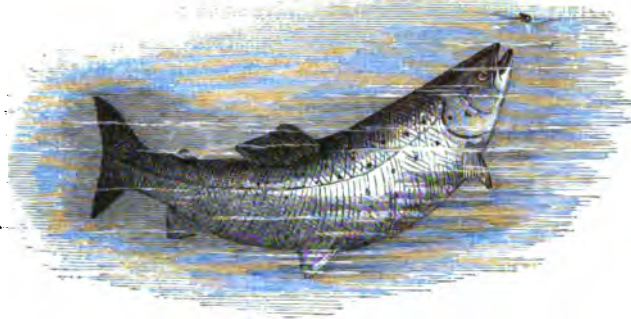
line may get entangled. Then as much of a strain must be brought to bear upon him as the tackle will withstand; and always reel in line when it is possible. The line should never be slack. If the trout will not rise at first, change your flies and try the old rule of looking closely at the insects which hover over the water and selecting from your fly-book a fly that imitates those insects as nearly as possible. The best general rule is to use small dark flies in bright, clear water, and larger bright flies in dark or turbid water. I need hardly say that fish are not to be lifted out of the water with a fly-rod. Let the trout run and struggle until the strain of the rod tires him out so that he can be easily drawn within reach and lifted out with the landing-net.

So you see that in fly-fishing for trout you learn a very fascinating art, which can be practiced among the most delightful of outdoor surroundings in the pleasantest months of the year. You will learn much more than books can tell you about the habits and curious ways of a fish which the most experienced anglers have considered for hundreds of years as, next to the salmon, their most worthy game. You will learn patience, perseverance, and all manner of practical lessons on trout streams, including the tying of knots and the repairing of rods. And the sunshine, the fragrance of flowery meadows, and the cool breath of the woods will give you a health which can not be found indoors. But let me urge upon you to remember that the true sportsman is always generous in his treatment of the noble fish which he pursues. He will never catch trout out of season. He will never kill more trout than can be made useful, nor will he ever kill them by unfair means. And he will never catch tiny troutlings, too small to afford sport, lest he should exhaust the streams, but he will carefully restore to the water any trout which are not at least six inches long. Our eager young fly-fishers who meet the gallant trout on fair and even terms will surely give the beautiful fish honorable treatment in these respects.

And when you go a-fishing, bearing these words in mind, may you be rewarded by baskets well filled with trout of noble size.



The net result.



A ROYAL FISH.

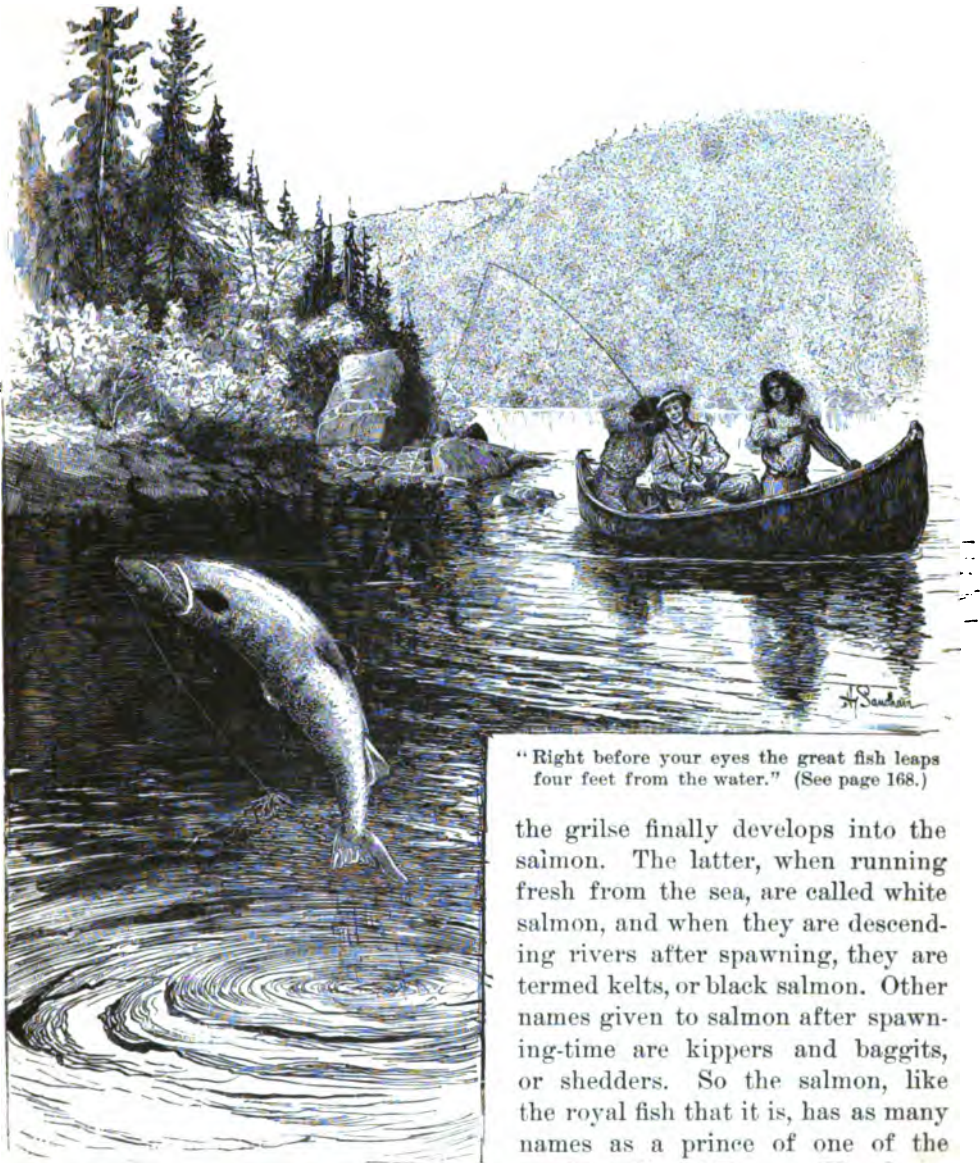
BY RIPLEY HITCHCOCK.

WHEN the Hudson River was first seen by St. Nicholas, or rather by his image, which was the figure-head of the Dutch ship *Goede Vrouw*, there were more salmon in the water than there were wild grapes about the Indian wigwams which stood where New York City stands to-day. That was a few years after the discovery of the river by Hendrick Hudson, in 1609. But in course of time, the salmon went the way of the Indians. The last native Hudson River salmon was caught in a net in New York bay about 1844; but more recently, attempts have been made to artificially stock that river and others with this royal fish. A year ago a few small specimens of this new stock were caught—the only salmon which had been taken from the Hudson in forty years. When St. Nicholas made his first visit to our shores, there were salmon in every river along the Atlantic coast, north of the Delaware. But as fishermen became numerous, as dams were built across the rivers, and as the water was made impure by town and city drainage, the salmon were driven northward, just as the Indians were driven westward. The salmon were forced to leave the Connecticut—another river where there is hope of introducing them again; they left the Merrimac when it was given over to manufactories; and now salmon are not to be found south of the rivers of Eastern Maine. Beyond, they visit the rivers of the British Provinces, Labrador, the Hudson Bay country, and even Greenland,—for one variety of salmon is a fearless Arctic explorer, and penetrates the Arctic Circle. The salmon is as much at home in Iceland and Norway as in England, Scotland, and Ireland. On the north-western American coast, from Northern California, Oregon, and Washington, to Alaska and beyond, there have always been vast numbers of this wonderful fish.

The gamy qualities of the salmon, which cause the fly-fisherman to rate him above all other fishes, are his enduring strength and his great activity. The salmon and the bluefish are the strongest game fishes known, and the former reaches a far larger size than the latter. The salmon and the swordfish are the fastest swimmers of all the forked-tail fishes. Only a fast-running horse could outstrip a swimming salmon; for it is estimated that the salmon swims a mile in less than two minutes. But the horse would soon be left behind, for the fish can cover thirty miles in an hour. When leisurely ascending rivers, with frequent rests in attractive pools, the salmon averages from fifteen to twenty-five miles a day. In leaping also, the salmon can easily beat the horse, for salmon have leaped up waterfalls twelve feet high. It was formerly supposed that the salmon, when about to jump, bent himself double, and took his tail in his mouth, so that he was like an elastic bow drawn tight. Then it was thought that he suddenly let go, his tail striking the water with great force, and away he went through the air. But now we know that the salmon prepares for a leap just as a boy does, with a short, sharp run. If the water at the foot of the dam or fall is not deep enough to allow this preparatory "run," the salmon can not jump. If there is water enough, he starts from the bottom, his powerful tail working as rapidly as the propeller-screw of a steam-ship. Aided by the pectoral fins, the upward movement grows quicker and quicker, until with a last muscular effort the salmon shoots from the water, his tail still vibrating for an instant, then becoming motionless, as the fish curves through the air and comes down above the obstacle. If a dam be built so high as to be impassable, the salmon will leave the river altogether, for instinct always leads them to the head-waters, where they lay their eggs. So fish-ladders and fish-ways of various kinds have been invented to help salmon and other fishes to surmount natural or artificial barriers. Fish-ladders have been constructed, by the aid of which salmon ascend falls over thirty feet high.

As soon as salmon enter rivers, they begin to jump, like a crowd of boys just let out of school. Standing on the shore of a salmon river in June or July, you will every now and then see the fish leap four or five feet out of water, glistening like polished silver, then curving over and falling with a heavy splash. Or sometimes their back fins will roll lazily out of the water, and you will be reminded of a school of porpoises. But there is nothing lazy about the salmon when once he is hooked. If there is a twenty-five pound salmon at the end of your line, jumping nearly as high as your head in the struggle to rid itself of the hook, you will be pretty sure to think of nothing except that fish.

But before the salmon reaches a weight of twenty-five pounds, he appears in so many and such different forms that very wise men have been unable to recognize him. When the salmon is just hatched, it is known as fry, or fingerling. Then it becomes a parr, or samlet, also called pink, or brandling, on some foreign rivers. The parr changes to a smolt, the smolt to a grilse, and

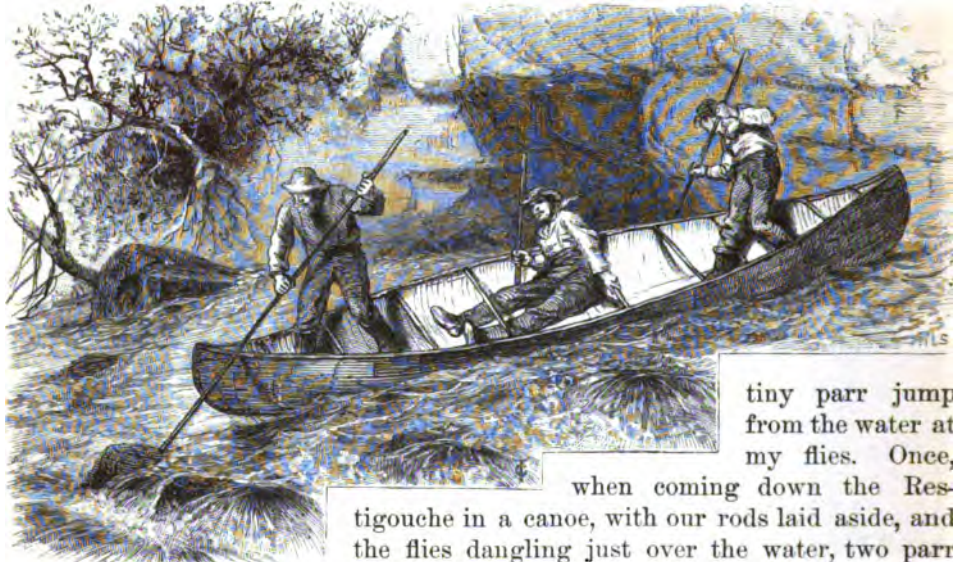


"Right before your eyes the great fish leaps four feet from the water." (See page 168.)

the grilse finally develops into the salmon. The latter, when running fresh from the sea, are called white salmon, and when they are descending rivers after spawning, they are termed kelts, or black salmon. Other names given to salmon after spawning-time are kippers and baggits, or shedders. So the salmon, like the royal fish that it is, has as many names as a prince of one of the royal families of Europe. The alevin, or baby salmon, is hatched in from

thirty to one hundred days after the eggs are laid in furrows in gravelly beds which are scooped out by the parent fish, near the head-waters of cold, clear rivers. Presently the alevin grows into the fry, or pink, which is an

absurd little fish about an inch long, goggle-eyed, and with dark bars on its sides. When some three months old, the fry makes a change like that of a chrysalis into a butterfly. It becomes a shapely little fish with a forked tail, and brilliant carmine spots shine out on its sides. Its back is of a dark slaty color, and the bars are less strongly marked as the parr grows older. The greediest of trout is not more hungry and active. I have often seen a dozen



Shooting the rapids.

tiny parr jump from the water at my flies. Once, when coming down the Restigouche in a canoe, with our rods laid aside, and the flies dangling just over the water, two parr leaped together and hooked themselves, although they were hardly four inches long. These pretty

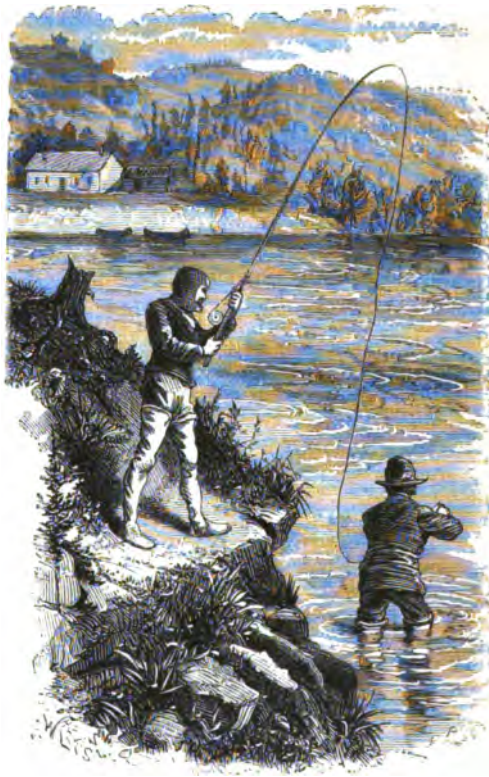
little fishes, which one might readily mistake for trout, were once supposed to belong to a species entirely distinct from the salmon. Naturalists were also puzzled by finding that some parr remain for nearly three years in fresh water. So they concluded that these latter parr never went to sea at all, and considered them a species by themselves, which they called *Salmo samulus*. But nature was finally seen to be wiser than the naturalists. Nature has decreed that only half the parr hatched in a given winter shall go down to the sea at one time, and in this way protects the race from the chance of wholesale destruction. So we are now told that some of the parr develop more rapidly than others, and migrate to the sea in their second spring, while others remain in the rivers a year longer, and some for still another year.

When the time for this migration approaches, the parr, which has been steadily growing plumper, undergoes another curious change. The carmine spots fade out, and the soft skin becomes covered with silvery scales which obscure the dark bars on the sides, although the scales can easily be rubbed away. At

this period the young salmon is called a smolt, and the smolt was also a riddle to wise men for a long time. It was thought that smolts which went down to the sea weighing three or four ounces, returned to the rivers in three months weighing six or eight pounds. Of course, such a gain as this was a very wonderful, indeed an unequaled performance, like the "swellin' wisely" of the Fat Boy in the "Pickwick Papers." It is now believed, however, that the smolt requires a year or fifteen months at sea for this great gain in weight. Then he returns to his native river, no longer an insignificant smolt, but a vigorous, beautiful grilse. The grilse is more slender than the salmon, the tail more forked, the scales more easily removed, and the top of the head and fins are not quite so black. But the grilse's sheeny, satiny sides are even more brilliant than the salmon's, and it is more playful and active, although its strength is less enduring. After the grilse has frolicked its way to the head of the river and spawned, it returns to the sea. When it visits the river again, the next year, it has become a full-grown salmon. These are the successive stages of the salmon's life.

But even in the last and most familiar stage, the salmon's habits are not fully understood. It is known that both young and old salmon, after descending a river, remain for a time in the brackish water at the river's mouth, where they get rid of fresh-water parasites which have become attached to their sides, and where their scales are hardened by a diet of small fish; but where in the sea the salmon go, no one really knows. After leaving the coast, they disappear. They have been found in very deep water hundreds of miles from any salmon river; but their marine feeding-grounds are still undiscovered. In the spring

they re-appear at the mouths of rivers, where they linger to free themselves from marine parasites. While in salt water, they will never jump at a fly; but as soon as they enter the fresh water of the Canadian rivers in June, the waiting Indians and fishermen see them rising freely out of the water. Yet, much of



The first salmon.



A famous Canadian salmon-pool. Junction of the Metapedia and Restigouche.

this leaping is plainly only for sport, and many people claim that salmon actually eat nothing at all during the time that they are going up rivers. These rivers offer a succession of pools and rapids. In almost every pool, during the day-time, in summer, there are salmon resting from the labor of stemming the current. It is said that at night they are often to be found on the bars in the shallow rapids above the pools. If the water is low, they ascend very slowly, but any rise in the river stimulates them into a rapid movement upward. When they descend rivers, they back down much of the way tail foremost, although the distance may be over a hundred miles. In swiftly running water they are forced to do this, for otherwise the water would rush into their gills and drown them. In still pools they make short runs down river, but they quickly wheel about and lie with their heads to the current. When they are descending, they are thin and ravenous; but they rapidly gain in plumpness after reaching the sea. In weight the salmon of the Canadian rivers average between twenty and twenty-five pounds. I suppose a season's catch would hardly average more than twenty pounds, for it would include many grilse of from eight to ten pounds weight, and salmon weighing only five or six pounds more. A thirty-pound salmon is very large, and a forty-pound fish will be talked of throughout the season; although it is said that salmon weighing fifty, and one weighing fifty-four, pounds have been caught in the Restigouche. The Princess Louise, the daughter of the Queen of England and the wife of the Marquis of Lorne, the former Governor-general of Canada, caught a forty-pound salmon in the Causapscaal River, in the province of Quebec, a few years ago. In the summer of 1885 I employed one of the canoe-men who had been with the Princess, and he had a great deal to say about her skill in handling that salmon. I don't think he cared much about other members of the royal family, but "The Princess, sir, she was

a good un with the rod." Salmon weighing sixty pounds are taken now and then in Scotch rivers, and a few rivers in England still yield large fish. Sir John Hawkins speaks of a salmon caught in an English river in April, 1789, which was four feet long, three feet around the body, and weighed seventy pounds. There is a story told of a Highlander who hooked a salmon in the River Awe, and played the fish for hours, until night came on without his being able to tire it out. Then, as the fish was sulking quietly at the bottom, he lay down, took the line in his teeth, that any motion might waken him, and went to sleep. The Highlander slept and the salmon sulked until three o'clock in the morning, when some friends of the former came to look for him. With their help he managed to land the fish about daybreak, and it weighed seventy-three pounds. This was certainly a giant, but a salmon weighing eighty-three pounds is reported to have once been sent to the London market. It would be a serious matter for any of our readers to make fast to a salmon as large as that. But

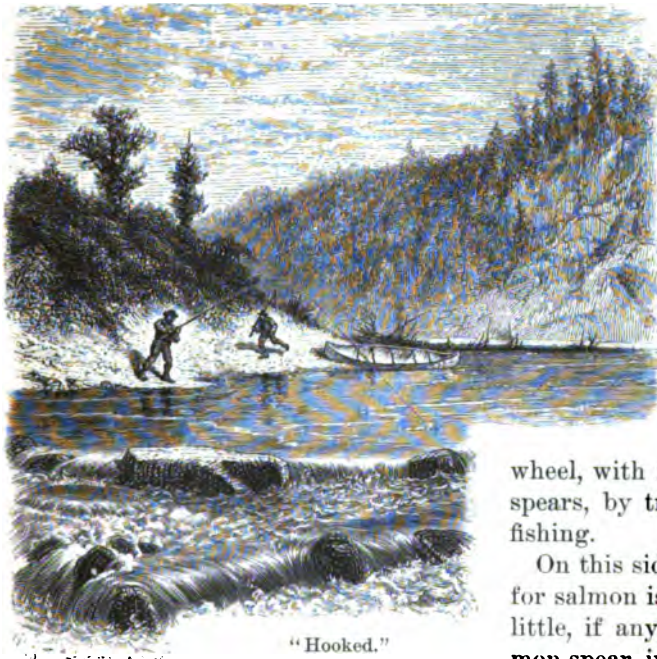
it will not happen on this side of the ocean.

There is only one way in which a true sportsman will catch a salmon, and that is by fly-fishing. But there are a great many other ways, some of which, although unfair, are rather curious. Salmon have been caught with an ax, with a pitchfork, with a

wheel, with many forms of nets and spears, by trolling, and by still-bait fishing.

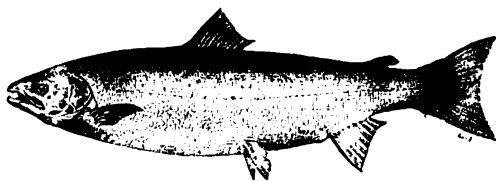
On this side of the ocean, trolling for salmon is unknown; there is very little, if any, bait-fishing, and a salmon-spear, in the North-east at least,

is only to be found in the hands of a red or white poacher. Poaching on Canadian rivers has diminished, but the law is still broken on the sly, and many odd stories are told of poachers' tricks. Nearly all these rivers are watched by two sets of wardens. There are the Government wardens appointed to prevent illegal fishing with nets or spears, or out of season, and there are wardens employed by private persons to watch the water which they lease; for, every pool in a



"Hooked."

salmon river is valuable property. Once the Government claimed the fishing privileges, but it was decided that the owners of lands along the rivers controlled the water; and now the farmer's income from his water is sometimes larger than that from his land; and the limits of each ownership are as carefully marked off as are the limits of farms or of town lots. The unlawful act which the wardens most carefully try to guard against is "drifting." One or two poachers will steal out at night carrying a peculiarly made net in their canoes. They stretch this across the head of a pool; and it is so weighted and buoyed that it stands upright, reaching nearly to the bottom. As the current drifts the net downward, one canoe stays at each end to keep it straight. There is usually a white manilla rope at the bottom of the net. Seeing this, the salmon raise themselves a little, only to be caught by the gills in the meshes. When the shaking of the net shows that one is caught, the poacher quickly paddles to the spot, raises the net, kills the fish with a blow on its head, and throws it into the canoe. In this sneaking way, nearly all the salmon in a pool may be netted out in a night. If the wardens happen to come along in their dug-outs, they try to seize the net and identify the poachers. Then there may be a fight, and perhaps a canoe will be sunk, and a poacher or a warden will get a cold bath. On one river the poachers used to station a boy on an island below them, with a horn which he blew whenever the wardens approached. One of the latter was so active that the poachers resolved to punish him. They took an old worthless net and stretched it out into the river from a rock on the bank. A rope was rove through the net and the shore end made fast over a pulley to the traces of a horse on shore. A boy stood beside the horse, and two poachers in a canoe held the outer end of the net. Down came the warden, poling along in his dug-out, and pulled the end of the net away from the seemingly unwilling poachers. He began taking it into his dug-out, congratulating himself on his prize, and had hauled it half-way in when



The salmon.

the boy on shore struck the horse, which started on a full gallop up the bank, jerking the net after him. In a flash the net was pulled out of the dug-out, the latter upset, and the astonished warden pitched into the river. But I hope the poachers were punished in their turn;

for, if these lawless men had their way, there would be no salmon left in the rivers, and no such glorious sport as fly-fishing.

It is for this that hundreds of Americans go away down East every summer. One of the most enthusiastic has been ex-President Arthur. At the junction of the Metapedia and Restigouche rivers are the comfortable buildings of the Restigouche Salmon Club, which is composed of New York gentlemen. In front of the club-house is the finest pool on the river, and the club owns land

and water for smaller American fishing privilege. Some of my boy brothers to Canada. If not, I hope they

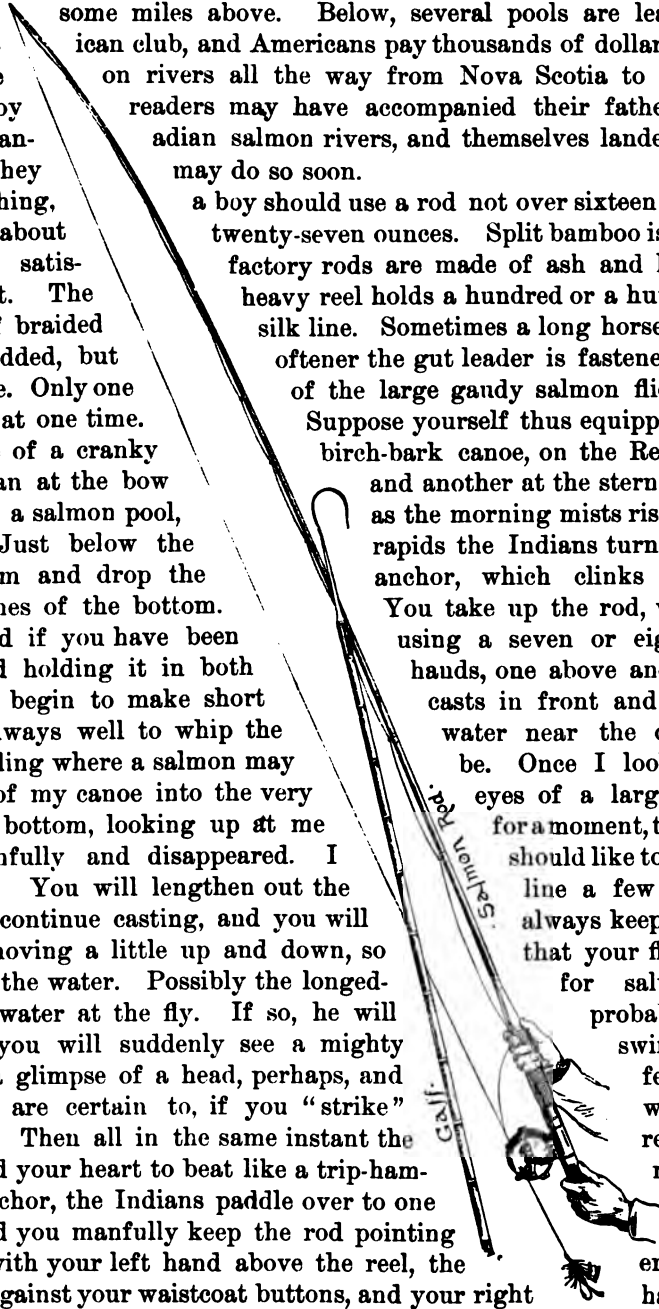
For this fishing, and weighing about material, but satisfactory greenheart. The fifty yards of braided line is added, but to the silk line. Only one on the leader at one time. in the middle of a cranky with an Indian at the bow to the head of a salmon pool, mountains. Just below the into midstream and drop the upon the stones of the bottom. seem awkward if you have been trout-rod, and holding it in both low the reel, begin to make short side. It is always well to whip the there is no telling where a salmon may over the side of my canoe into the very. It lay at the bottom, looking up at me its tail scornfully and disappeared. I more of him. You will lengthen out the time, as you continue casting, and you will of your rod moving a little up and down, so in motion in the water. Possibly the longed-jump out of water at the fly. If so, he will. More likely, you will suddenly see a mighty water, catch a glimpse of a head, perhaps, and at least you are certain to, if you "strike" see the swirl. Then all in the same instant the to scream and your heart to beat like a trip-hammer. comes the anchor, the Indians paddle over to one the river, and you manfully keep the rod pointing clutching it with your left hand above the reel, the butt pressed against your waistcoat buttons, and your right

some miles above. Below, several pools are leased by a ican club, and Americans pay thousands of dollars for fishing on rivers all the way from Nova Scotia to Labrador. readers may have accompanied their fathers or big adian salmon rivers, and themselves landed salmon. may do so soon.

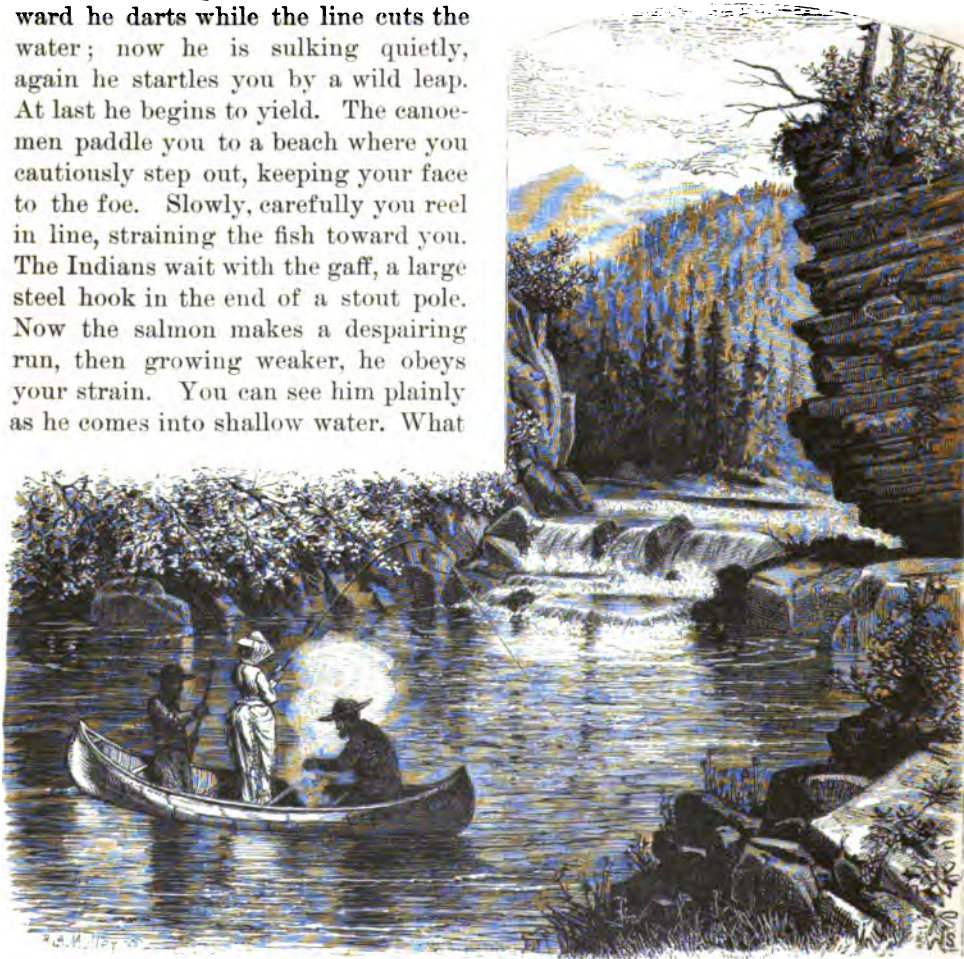
a boy should use a rod not over sixteen feet long, twenty-seven ounces. Split bamboo is the finest factory rods are made of ash and lancewood heavy reel holds a hundred or a hundred and silk line. Sometimes a long horse-hair cast-offener the gut leader is fastened directly of the large gandy salmon flies is used

Suppose yourself thus equipped, sitting birch-bark canoe, on the Restigouche, and another at the stern, paddling as the morning mists rise from the rapids the Indians turn the canoe anchor, which clinks musically. You take up the rod, which will using a seven or eight ounce hands, one above and one be-casts in front and on either water near the canoe, for be. Once I looked down

eyes of a large salmon. for a moment, then flirted should like to have seen line a few feet at a always keep the point that your fly shall be for salmon will probably miss it. swirl in the feel a tug; when you reel begins mer. Up side of upward, end of the hand ready



to reel in line if the fish comes toward you or sulks at the bottom. Then all at once something happens which takes away your breath. Right before your eyes the great fish leaps four feet from the water, his writhing body curved like a silver bow, and glistening in the sunlight until he falls back with a splash that almost stops your heart's beating, for fear he has broken loose. But no! You instinctively lowered the tip of your rod when he jumped, and he did not fall upon a taut line as he hoped and break away. The reel screams again as the salmon darts off down river; and as the canoe-men paddle after, you think of the Indian who lassoed the locomotive. Perhaps he will rush through the lower rapids into the pool below. Never fear! He is well hooked, and the strain of the rod is telling. Backward and forward he darts while the line cuts the water; now he is sulking quietly, again he startles you by a wild leap. At last he begins to yield. The canoe-men paddle you to a beach where you cautiously step out, keeping your face to the foe. Slowly, carefully you reel in line, straining the fish toward you. The Indians wait with the gaff, a large steel hook in the end of a stout pole. Now the salmon makes a despairing run, then growing weaker, he obeys your strain. You can see him plainly as he comes into shallow water. What



A salmon pool on the St. John River, Canada.

if you should lose him now! The Indians, bent double, ankle-deep in water, watch his every motion. One strikes at him, but misses, and the gallant fish makes another flight for life. But now he is within reach. The gaff is raised



A sudden stop.

carefully, you hold your breath, and now the steel pierces that silvery side, and out of the foaming water the gaff draws a noble salmon, your first—and let me hope a forty-pounder. Perhaps twenty minutes have passed since you hooked him; perhaps an hour; but it seems as if you have lived an age.

May all my boy readers at some time know such thrilling sport as this! And when their sisters come to young ladyhood, they also may hope to emulate their

brothers, and some time land a salmon. At least they can have the sport without holding the rod. One of the prettiest sights which I saw on the Restigouche was the eager face of a little girl in a canoe as she watched her father, who was fighting a twenty-five pound salmon. Looking at her parted lips and wide-open eyes, I felt sure that girls as well as boys could feel the fascination of that most exciting of all forms of angling, salmon-fishing.



The Gentle Angler.

ODD MODES OF FISHING.

BY DANIEL C. BEARD.



JUGGING for cats" is a most peculiar and original manner of fishing, common among the colored people of the Southern States. It combines exercise, excitement, and fun in a much greater degree than the usual method of angling with the rod and reel.

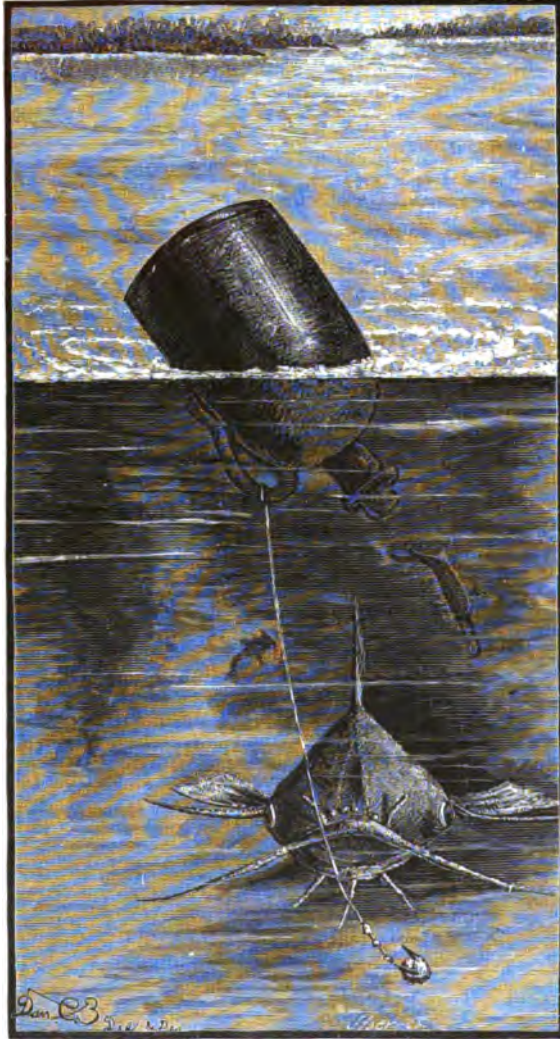
The tackle necessary in this sport is very simple: it consists of five or six empty jugs tightly corked with corn-cobs, and a stout line five feet in length, with a sinker and a large hook at the end. One of these lines dangles from the handle of each jug. Baits of many kinds are used, but a bit of cheese, tied in a piece of mosquito-netting to prevent its washing away, appears to be considered the most tempting morsel.

When all the hooks are baited, and the fisherman has inspected his lines and found everything ready, he puts the jugs into a boat and rows out upon the river, dropping the earthenware floats about ten feet apart in a line across the middle of the stream.

The jugs will, of course, be carried down with the current, and will have to be followed and watched. When one of them begins to behave in a strange manner, turning upside down, bobbing about, darting up stream and down, the fisherman knows that a large fish is hooked, and an exciting chase ensues. It sometimes requires hard rowing to catch the jug, for often when the fisherman feels sure of his prize and stretches forth his hand to grasp the runaway, it darts off anew, frequently disappearing from view beneath the water, and coming to

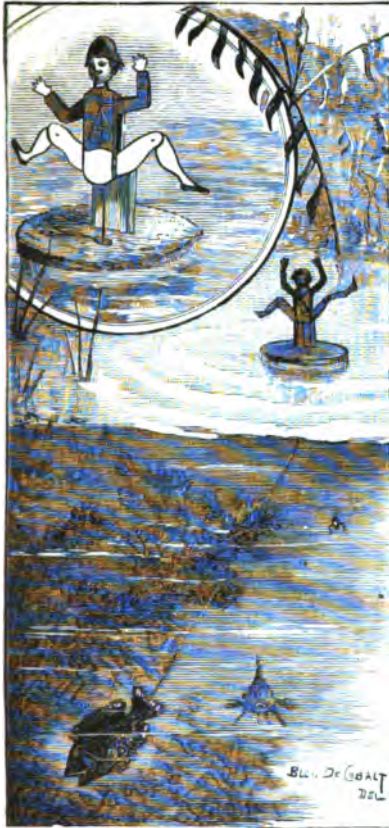
the surface again yards and yards away from where it had left the disappointed sportsman.

One would think that the pursuit of just one jug, which a fish is piloting around, might prove exciting enough. But imagine the sport of seeing four or five of them start off on their antics at about the same moment. It is at such a time that the skill of the fisherman is tested, for a novice, in his hurry, is apt to lose his head, thereby losing his fish also. Instead of hauling in his line carefully and steadily, he generally pulls it up in such a hasty manner that the fish is able, by a vigorous flop, to tear itself away from the hook. To be a successful "jugger," one must be as careful and deliberate in taking out his fish as though he had only that one jug to attend to, no matter how many others may be claiming his attention by their frantic signals. The illustration shows a jug turned bottom upward, the line having just been pulled by a fish taking a nibble at the bait, without having quite made up its mind to swallow it.



An active jug.

Another method of catching fish, in principle similar to jugging, is by means of a jumping-jack, or small, jointed man, whose limbs are moved by jerking a string attached to them. This little figure is fastened to a stick, which is secured in an upright position on a float, made of a piece of board. Through a hole in the float is passed the string attached to the figure, and tied securely to this are the



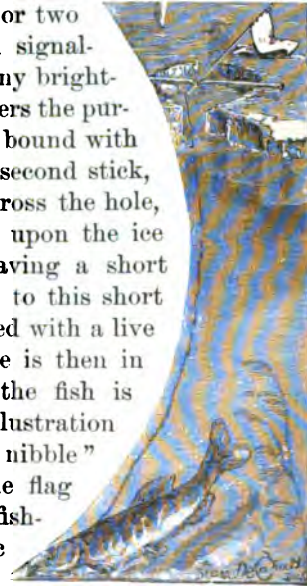
The tell-tale Jack.

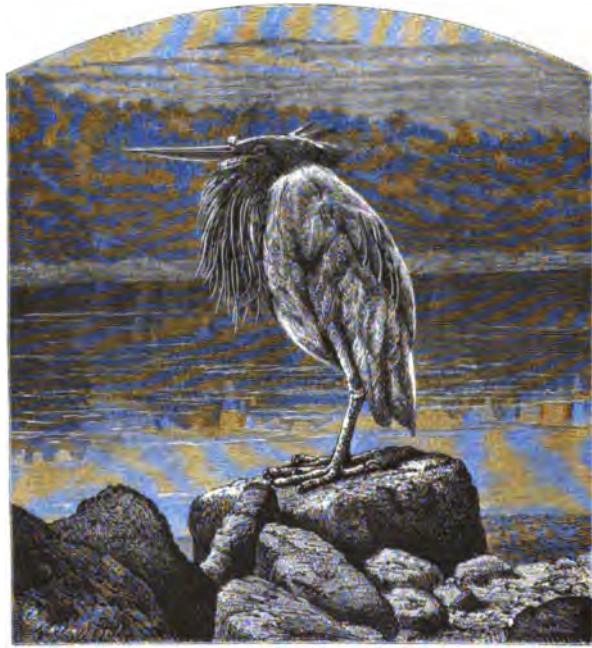
at either side; the flag, also, rests on the ice, leaving a short piece of the flag-rod projecting over the cross-stick; to this short end the line and hook are fastened. The hook is baited with a live minnow, and lowered through the hole. The tackle is then in readiness for the capture of a pickerel. When the fish is hooked, his struggles keep the flag flying. The illustration shows a fish in the act of taking the bait. If the "nibble" proves a strong one and the pickerel is caught, the flag waving from the upright staff will signal the young fisherman, who by this easily contrived and automatic fishing-tackle may be able to attend to a number of lines if the holes are within sight from one another.

hook and line. After the hook is baited, the float is placed on the surface of the water, and the little man, standing upright, is left to wait in patience.

Presently a fish, attracted by the bait, comes nearer the surface, seizes the hook quickly, and darts downward, pulling the string and making the little figure throw up its arms and legs, as though dancing for joy at having performed its task so well. The capering of Jack is the signal to his master that a fish has been caught, and is struggling to free itself from the hook. This manner of fishing is necessarily confined to quiet bodies of water, such as small lakes or ponds, for in rough water poor little Jack would be upset.

A very simple but ingenious contrivance for fishing through the ice may be arranged by fastening at the end of a light rod, a foot or two in length, a small signal-flag; a piece of any bright-colored cloth answers the purpose. This rod is bound with strong string to a second stick, which is placed across the hole, lying some inches upon the ice





Not handsome, but a good fisherman.

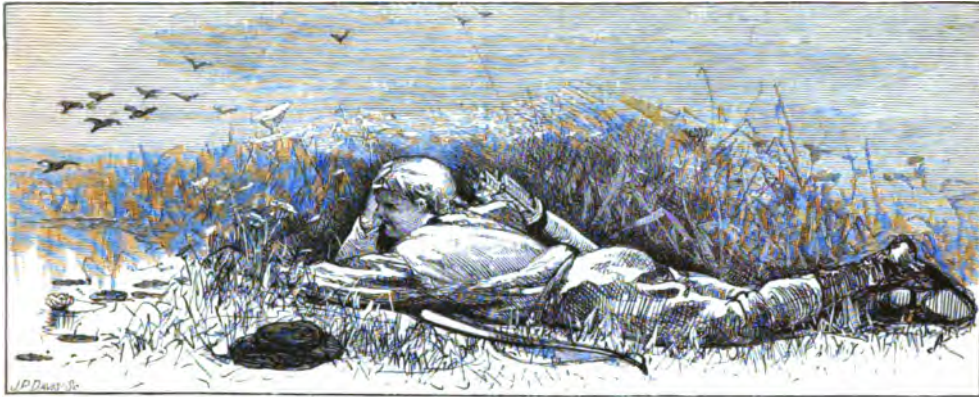
ARCHERY.



"He that hits that rod at five-score yards,

I call him an archer fit to bear both bow and
quiver before a king."

Sir Walter Scott.



THE BOW AND ITS USE.

BY MAURICE THOMPSON.

IN this paper I purpose to give boys a complete manual of the art of shooting with the bow and arrows, as well as a slight outline of the history of archery.

The bow and arrows are older than any records of history. Even the most ancient inscriptions give us no clew to their invention. Nearly all the savage tribes of men of every country and time have possessed the bow as a weapon handed down through countless generations from an unknown date.

The ancient Egyptians were archers, so were the Parthians, the Scythians and Carduchians, as well as the more savage peoples of Europe and Southern Africa.

When Columbus discovered America, the wild men of our forests were armed with bows and arrows of sufficient power and workmanship to render them quite deadly weapons, and the researches of archæologists have disclosed the fact that for unknown ages before the time of Columbus, stone arrow-heads were used by tribes probably long extinct when he made his discovery. So it is probable that the invention of the bow and arrow antedates every form of civilization.

It is believed that archery was practiced in Great Britain by the primitive inhabitants, though it may have been introduced by the Romans; but after the Norman conquest the art rose to its highest perfection, and England became renowned the world over for its matchless bowmen. The British archers won many famous battles, and their skill and prowess were sung by the poets and praised by historians. Even kings were proud to be able to excel with the bow.

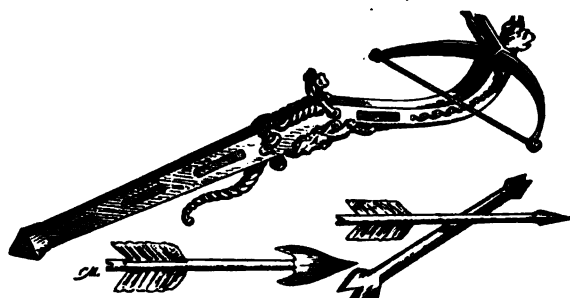
About the time of the Norman conquest, in an early part of the eleventh century, the cross-bow came into use. It was the most deadly of all the missile

weapons before the perfecting of fire-arms. The Spaniards brought it to the greatest degree of efficiency, but the French and English also made very fine cross-bows. It was very simply constructed. The stock was of black oak, carved to suit the taste of the maker, whilst the lath, or bow, was of spring steel. The stocks of some cross-bows were straight, others were crooked, somewhat after the shape of the stock of a gun. A great many of these weapons had wooden bows in the place of steel lathes; these were made of yew-wood. The arrows of the cross-bow were called quarrels, or bolts. They were shorter, thicker, and heavier than the arrows of the English long-bow. The place in the cross-bow where the string is fastened when it is pulled back, ready to shoot, is called the nut. From the nut to the fore end of the stock the wood is hollowed out, so that, when a quarrel is placed in position for firing, it does not touch the stock, except at the tip of its notch and the point where it lies on the fore end. The trigger adjusted on this stock works on a pivot, causing the nut to free the string, whereupon the bow discharges the quarrel.

The history of the cross-bow is very interesting. Richard the Lion-hearted was a great cross-bowman. He carried a very strong arbalist (the old name for cross-bow) with him everywhere. Even on his long expedition to Palestine against the Saracens his favorite weapon was his constant companion. It is said that at the siege of Ascalon Richard Cœur de Lion aimed his quarrels so skillfully that many an armed warrior on the high walls was pierced through and through. The steel bolts fired from the strongest cross-bows would crash through any but the very finest armor. There are breast-plates and helmets of steel, preserved among British antiquities, which have been pierced by quarrels. I have read in old books, written in French and Spanish, all about

how these terrible weapons were made and used.

The mediæval arbalister, as the cross-bowman was called, is represented in old drawings and engravings as a strong, heavy-limbed man, wearing a helmet and a coat of chain mail, or of quilted silk and thongs of raw-hide, and a loose, shirt-like garment over



The cross-bow.

all, belted at the waist. He stands in the attitude of aiming, with his feet planted firmly on the ground, his bow-stock resting in the hollow of his left hand whilst his right forefinger presses the trigger. He takes sight over the point of his quarrel. His attitude is very much like that of a rifleman aiming a rifle.

The manner of hunting deer in those days was to stand in a spot whence you could see in all directions through the forest, while a number of expert woodsmen drove the game near to you as you held your arbalist ready to shoot.



A cross-bowman of the Middle Ages.

If you shot at a running deer, you would have to aim far ahead of it in order to bring it down.

Hare or rabbit shooting was great sport for the cross-bowmen. For this purpose lighter arbalists were used. The hunter kept carefully trained dogs, somewhat like our pointers and setters, whose business it was to find the game. Twenty-five yards was about the usual distance for shooting at rabbits. They were rarely shot while running.

The long-bowmen of England cordially hated the arbalisters, especially when it came to shooting game in the green woods. The good yeomen who had spent years of unremitting practice to become proficient with the famous Norman long-bow could not bear to see lazy fellows, who had never given a month to practice, coming into the best hunting-grounds armed with those murderous

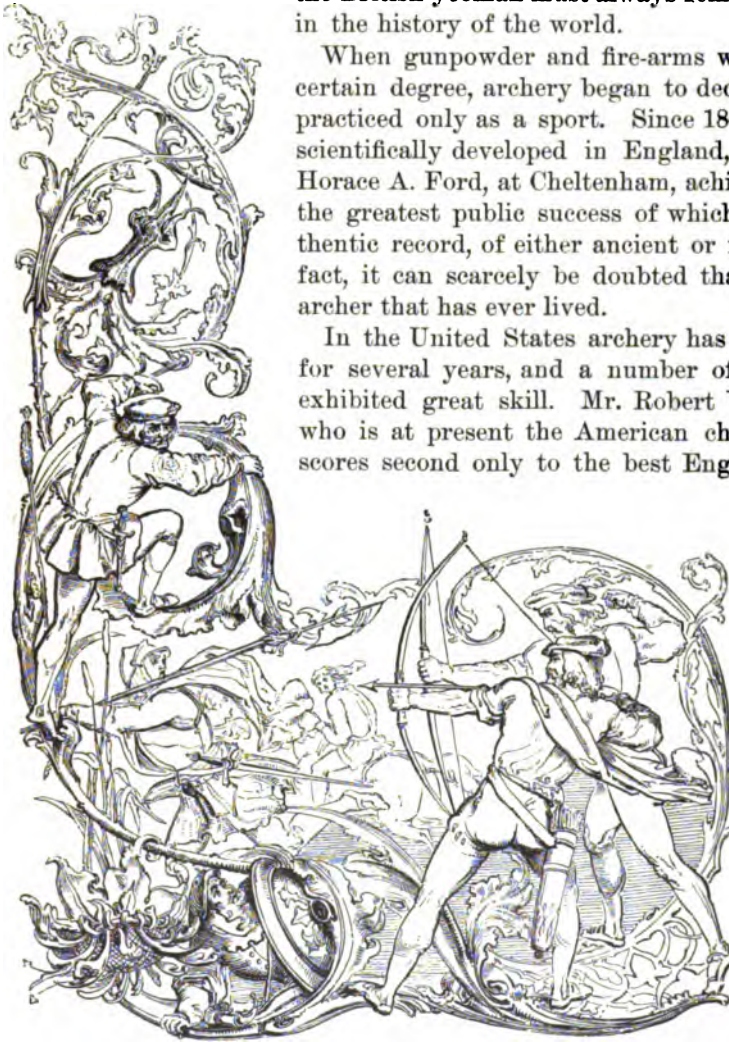
steel cross-bows. A great deal of quarreling and bloodshed was the result. So, as I have said, the Government of England passed stringent laws against the arbalist, and the weapon became somewhat dishonored. But in France and Spain it held the supremacy over all the weapons of the chase.

At a very early date the wood of the yew-tree was discovered to be the best suited for bows, and the English self-yew long-bow remains to this day the historic weapon about which cluster the most romantic legends of our language. In fact, the long flint-lock rifle of the early American woodsman and the bow of the British yeoman must always remain sharply defined in the history of the world.

When gunpowder and fire-arms were perfected to a certain degree, archery began to decline, and it is now practiced only as a sport. Since 1844 the art has been scientifically developed in England, and in 1857 Mr. Horace A. Ford, at Cheltenham, achieved with the bow the greatest public success of which we have any authentic record, of either ancient or modern times. In fact, it can scarcely be doubted that he was the best archer that has ever lived.

In the United States archery has now been popular for several years, and a number of our archers have exhibited great skill. Mr. Robert Williams, of Ohio, who is at present the American champion, has made scores second only to the best English records.

Shooting with the long-bow is charming sport for boys, affording most excellent physical and mental exercise and an opportunity for friendly rivalry in skill in a contest where merit always wins. It is a game in which there is no possibility of any advantage being gained by tricks



or dishonest turns. Genuine, fair, honorable work is the only road to success. Hence it offers no temptations to one who desires to overreach his competitors by sharp practices. The archer must gain his victories literally by "the sweat of his face."

So long as the bow was used as a military and hunting weapon, the method of using it prevented that nice accuracy of execution to which modern sportsmen have attained. Of course it was impossible in battle or in the chase to exactly measure the distances to be shot over, consequently the archer had to trust wholly to his judgment. Now, as I shall presently show, in order to aim an arrow with exact accuracy, the archer must know precisely the distance between himself and the object at which he aims. It was Mr. Ford, whom I have already mentioned, who reduced target practice in archery to a science, and I shall now proceed to condense from his book, "Theory and Practice of Archery," the rules by which the best shooting may be done :

The first step is to get good weapons. The self-yew bow, that is, a bow made of one stick of yew, is probably the best, as it certainly is the highest-priced of all bows ; but a very good weapon is the self-lancewood bow, to be bought for a very moderate sum.



A long shot.

The length of the bow should be about that of the archer. Its strength should be such that the shooter can draw it with ease, without any straining or tremor of the muscles. Says Mr. Ford: "The self-bow is the real old English weapon; the one with which the many mighty deeds that rendered this country (England) renowned in times gone by were performed."

He states that Italian and Spanish yews are the best woods, being cleaner and finer in the grain than the English yew.

"In shape, the bow should be full in the center and taper gradually to each horn, not bend in the hand, or the cast will be deficient." What is meant here by the "cast" is the shooting power. Good bows are tipped at each end with horn in which "nocks" or notches are cut for the string, and are wrapped in the middle, or handle, with soft plush.

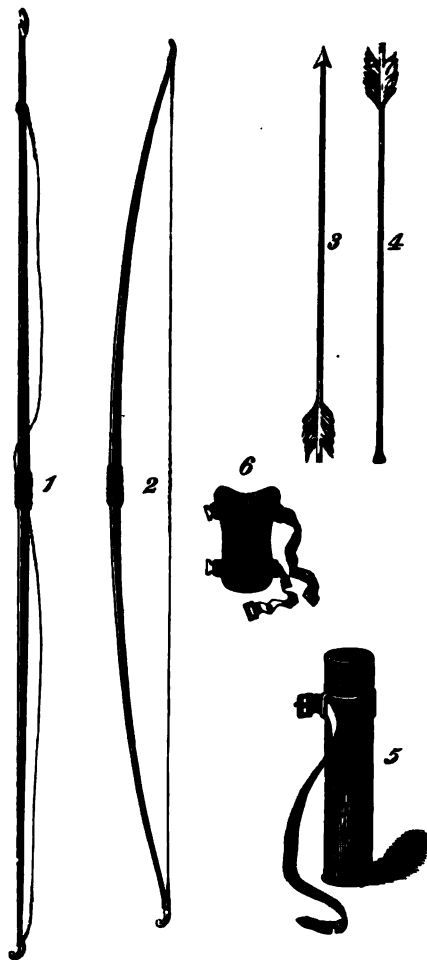
Bows have their strength measured and expressed in pounds. Thus, if it requires a pull of 40 pounds to draw a 28-inch arrow to its full length in a bow, the weapon is called a 40-pound bow.

"The arrow," says Mr. Ford, "is perhaps the most important of all the implements of the archer, and requires the greatest nicety of make. . . . Arrows are either *selves* or *footed*; the latter, the more preferable, have a different and harder wood dovetailed upon them at the pile end."

"A shaft," says Roger Ascham, a very old writer on archery, "hath three principal parts, the stele (that is, the body of the arrow), the feather, and the head." The head is sometimes called the *pile* or *point*.

"*Red deal*," continues Mr. Ford, "when of clean, straight grain and well seasoned, whether for *selves* or *footed* shafts, is incomparably superior to all other arrow-woods."

"The feathering of the arrow is the most delicate part, and requires great care and experience to effect it."



1, Bow (unstrung); 2, bow (strung); 3, barbed arrow; 4, blunt arrow; 5, quiver and belt; 6, guard.

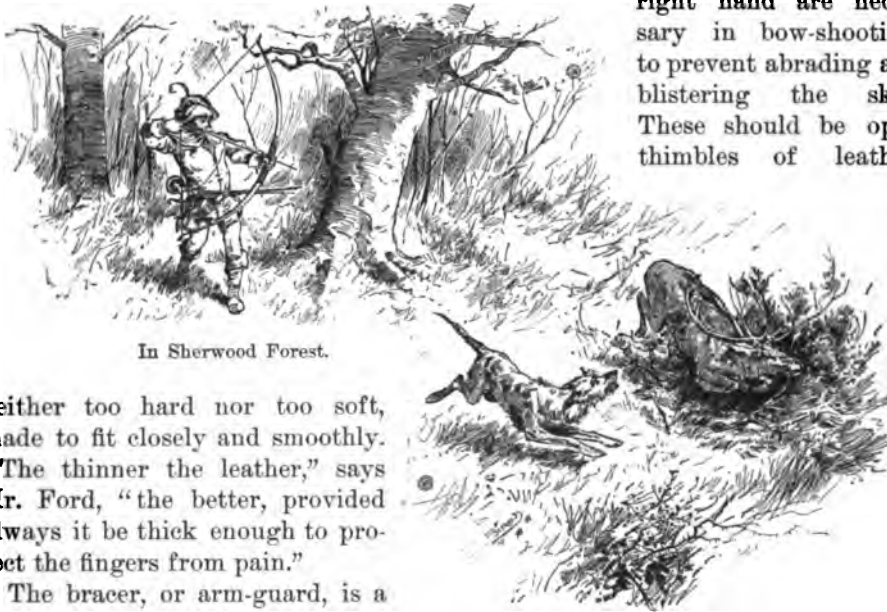
The best arrows have three feathers, or vanes of feather, arranged equidistant and parallel with each other and the arrow on the shaft near the nock.

The regulation length of the arrow is 28 inches from point to nock.

For expressing the weight of arrows, English shillings and pence have been adopted. The proper weight for arrows used by boys will vary from 4s. 3d. to 4s. 6d.

So far I have been speaking of bows and arrows which may be bought of archery dealers in any city, and it is quite doubtful whether any boy, no matter how skillful with tools, can make weapons at all comparable with even the poorest of those in the shops. This is especially true of arrows; for, simple as appears their mechanism, the finest American wood-workmen have failed to make shafts quite as good as the best English ones; and since to do accurate shooting the very best arrows must be used, it is hardly worth while for one to attempt to make his own weapons. The English arrow-makers have brought their art as near to perfection as it is likely ever to go.

Finger-stalls to cover the ends of the first, second, and third fingers of the right hand are necessary in bow-shooting, to prevent abrading and blistering the skin. These should be open thimbles of leather,



In Sherwood Forest.

neither too hard nor too soft, made to fit closely and smoothly. "The thinner the leather," says Mr. Ford, "the better, provided always it be thick enough to protect the fingers from pain."

The bracer, or arm-guard, is a piece of hard, smooth leather with straps to fasten it on the left fore-arm near the wrist, to prevent the bow-string from hitting and wounding the flesh there. Some of the best archers do not wear the bracer, preferring to so hold the bow that the protection is not needed. Mr. Ford, however, wore a bracer in making all his wonderful scores.

The archery target is a flat circular pad of twisted straw, four feet in diameter and faced with cloth upon which is a central disk called the gold, usually painted yellow. Around this disk is a band of red, next comes one of blue, then one of black, and lastly one of white.

The game is counted as follows:

A hit in the gold counts	9
" " red "	7
" " blue "	5
" " black "	3
" " white "	1

This target is made to rest on a tripod or stand, and its center should be about four feet from the ground when ready to be shot at.

Let us now have Mr. Ford's method of shooting, and see if we can get the secret of his great skill.

The first thing to do is to string the bow. The string will be looped at each end so as to fit the notches or "nocks" of the bow and will be from two to three inches shorter than the weapon.



Stringing the bow.

Slip the larger loop over the upper end of the bow and slide it down several inches below the nock, then put the smaller loop over the lower end of the bow and fit it securely into the nock. Now, taking the bow-handle in the right hand, place the lower end of the bow in the hollow of the right foot as it rests firmly on the ground with the back of the bow next to the foot; next place the left hand on the back of the bow just under and against the upper loop, which must be between the thumb and forefinger. Now pull with the right hand and push with the left, at the same time slipping the upper loop into the nock; this done, the bow is ready for use.

The process of shooting is very simple. Grasping the bow by the plush handle in the middle with the left hand, the archer places the notch of the arrow on the middle of the string with his right hand, the shaft resting across the bow on the left side just above and touching his left hand. The first three fingers of his right hand, covered with tips, are now hooked round the string



A shot at a woodpecker.

so that the arrow-nock is between the first and second. The left arm is extended and the string drawn steadily until the arrow-head is near the left hand, when the string is loosed and the arrow flies away.

Here is the position in which Mr. Ford stood to shoot: Body easily erect, feet from five to eight inches apart, with the toes turned slightly out, the left side turned toward the target, the whole person easily and gracefully balanced. Standing in this position, with the bow in the left hand and the arrow properly fixed on the string ready for shooting, the next thing is to draw; and this operation, though very simple, is a very difficult one to perform with absolute correctness. The left arm must be extended firmly, by a steady motion, until it is straight, and at the same time the arrow and string must be drawn steadily and smoothly back to a point just below the shooter's chin, where the string must be loosed with perfect evenness and smoothness.

In the meantime the arrow must have been "aimed in," that is, the shooter must have taken aim during the process of drawing back the bow-string. Mr. Ford studied the subject of aiming and originated a system which has never been approached, much less equaled, by any other. His way of aiming was as follows:

Draw the arrow back with the string until at least three-fourths of its length has been taken up, then take aim with the right eye, keeping both eyes open, however, then finish the draw and let fly. But in order to aim successfully, it is

quite necessary for the young archer to understand the flight of an arrow, for, in shooting at a target, if the distance be longer than about forty yards, it will be observable that the shaft in its course through the air will rise higher than



Drawing the bow.

the top of the target even when successfully aimed. This curve, through which the arrow flies, is called its trajectory.

Now suppose you are using a 30-pound bow at a target sixty yards distant, you will probably find that the trajectory carries the arrow far above the top of the target in order to make a central hit. For this reason, if you wish to hit the gold you must aim at some point of space above the top of the target; this point is called the *point of aim*, and whenever the distance shot is short enough to make the point of aim fall on the gold, it is called *point-blank range*.

Now, in drawing as above directed, the arrow is, of course, far below the shooter's eyes, and consequently he can not "sight" along it, as he would along the barrel of a gun; he must, therefore, look directly over the arrow-point to the point of aim. In other words, he must make the point of the arrow appear to cover the point of aim, whether that be on the gold or above it.

One thing about aiming Mr. Ford strenuously insists upon, viz.: Keeping the entire length of the arrow

within the shooter's vision during the whole operation of drawing, aiming and loosing. This is accomplished by means of what he calls "indirect vision," the "direct vision" being fixed upon the point of aim, and its object is to enable the shooter to bring his arrow into a right line under his eye. What is meant by "indirect vision" will be readily understood by pointing your finger at a spot upon which you have your eyes steadily fixed. Not only your finger, but your entire arm as well, will be seen, although your "direct vision" is still leveled upon the spot pointed at.

To loose the string properly requires the utmost care and nicety. Mr. Ford says: "However correct and perfect all the rest of the archer's performance may be, the result will infallibly prove a failure, and end in disappointment, should this said point of loosing not be also successfully mastered." The loose should be affected at a point perpendicularly under the archer's right eye and just below his chin. The fingers should slip from the string smoothly and softly, but not draggily, nor yet with a jerk, and in no case must they be allowed in the least to follow the string in loosing.

"Especial care must be taken that, whilst loosing, the left arm maintains its position firmly and unwaveringly, and does not give way at the final moment in the slightest degree, as in this case the arrow is sure to drop short of the mark."

Great care must be taken to make the draw to exactly the same point at every shot. In short, to become a reliable archer at the targets, one must learn to do every act in exactly the same way each time one shoots. He who is continually changing his method and trying new experiments will never succeed.

The best archers lean the upper end of the bow a little to the right in shooting; this keeps the arrow well in its place, and at the same time enables the string to be drawn below the chin with greater ease and steadiness.

The following five rules, if memorized and strictly followed, will enable any one to shoot in Mr. Ford's style:

Stand easily erect and firmly on both feet, with the left side toward the target.

Hold the bow in the left hand, grasping it firmly by the plush handle.

Lay the arrow across the bow on the left-hand side, just above and resting against the first "knuckle"

of the left hand, and with the nock well set on the middle of the bow-string.

Hook the first three fingers of the right hand (covered with smooth leather tips) around the string, so that the string rests against the balls of those fingers,



Aiming high.

midway between the first joint and the end, with the nock of the arrow between the first and second fingers.

Now extend the left arm, turning the upper end of the bow a little to the right, and at the same time draw the string and the arrow along with it, so that at least three-fourths of the length of the shaft is taken up; here pause an instant and take aim, and then finish the draw to just below the chin, and loose.

Of course, mere rules can not make an archer, any more than the multiplication table can make an arithmetician. Careful study and intelligent practice must supplement the directions above given. Too much practice, however, is not recommended. Bow-shooting is hard work, and is especially taxing on the strength of the left arm and the fingers of the right hand. In selecting a bow, beware of one that is too strong for easy handling. To shoot well, the archer must be master of the bow, instead of getting a bow that can master him.

Boys will find sixty yards and less the best distances for target practice, and in order that the young archer may know when he is doing good shooting, I here append tables showing some scores made at that and shorter distances by a number of the best English and American archers. The tables give the distance shot, the number of shots, the number of hits, and the score made by each shooter.

Table of the best 60-yards scores ever made in England and America:

	Distance Shot.	No. of Arrows Shot.	No. of Hits.	Score.
H. A. Ford	60	24	24	188
Maurice Thompson.....	60	24	24	176
W. H. Thompson	60	24	24	160

Table of best scores at 40 yards:

	Distance Shot.	No. of Arrows Shot.	No. of Hits.	Score.
W. H. Thompson	40	30	30	246
Maurice Thompson	40	30	30	244
F. C. Havens	40	30	30	230

AN ARCHER AMONG THE HERONS.

BY MAURICE THOMPSON.

THE herons of North America have their homes for the most part in the vast swamps of Florida, Georgia, and Louisiana, though in the warm season many species are seen, scattered over a large area of the United States, as far north as the great lakes. These birds are not killed for food, but the plumes of several species are quite valuable. This fact has made heron-shooting one of the principal objects of the bird-hunter, especially in Southern Florida.

Some years ago, while spending a part of the winter on the Floridian peninsula, I was lucky enough to have a fine opportunity for trying the long-bow in one of the most populous haunts of the herons.

My brother and myself were well-grown boys,—almost men,—and our camp was on a beautiful head-land, overlooking a narrow inlet of the gulf of Mexico, with a great swamp of cypress on one hand and a dense hummock forest on the other. We had a sail-boat, safely moored in a little land-locked bight, and provisions enough to last us for several weeks. There was not a human being nearer us than the inhabitants of a small village some thirty miles away. We had been informed that we should find vast “rookeries” of herons not far from this point, and, for once, the statements of our informant proved entirely true. Even before we landed we saw a scattered line of the wide-winged birds slowly beating against a light breeze across an open strip of marsh toward the timbered swamp-lands, and as we were working our boat into the bight of which I have spoken, three or four snowy herons arose from a jungle of tall grass close to us and flew away in their peculiar, stately manner, with their long necks folded against their breasts and their legs stiffly projecting behind them. This sight made us impatient to begin our archery, but we must first establish our camp, a work which kept us quite busy until nightfall.



In the heron country.

Besides pitching the small tent that we had brought with us, we erected a shed of brush which would be cool to sit under if the weather should get very hot, and the outlook from its open doorway was a delight to our young hearts.

The head-land upon which our camp was established was thinly covered with a growth of slender pine trees, and between two of these we swung a double hammock in which we both slept, well wrapped in our blankets; for, the nights are nearly always chilly on that coast. The moon was almost full, giving a splendid light, and a fresh breeze sometimes swayed us to and fro. I awoke several times during the night and heard the bitterns croaking far and near on the marsh, their harsh notes somewhat softened by the distant sounds of the gulf and the slumberous roaring of the pine-tops overhead.

Next morning we were up with the sun, and making ready for a day with the herons. A good breakfast of broiled bacon, bread, and coffee fortified us for a long tramp. Rubber boots, with oiled canvas legs reaching to our waists, were our protection against snakes and water. We thoroughly oiled our bows and selected two quivers each, one of heavy and one of light shafts, and bestowed a luncheon in our pockets. Taking down the mast of our boat, we resorted to the oars, and pulled up the creek about a mile, to where a deep, narrow stream of fresh water came in from a dense cypress swamp. A half-mile up this stream

we ran into a small pond which was surrounded by a wide bordering of lily-pads, saw-grass, and clumps of various kinds of water-shrubs, which, in turn, was hemmed in by the wildest cypress woods I ever saw. The tree-tops were literally packed with old nests, made in the peculiar heron style,—huge bristling piles of cross-laid sticks not unlike the brush-heaps of our Western clearings. Different species of heron appeared to have built here for years, almost ages—in perfect amity. Their nesting season was now approaching, and the birds were congregating here from many a watery and boggy haunt in all the region round. They were in full plumage, showing their colors to the best effect.

Our boat soon ran aground, the water in the pond being too shallow to float her, so we had to wade; but before leaving the boat, we stuck up an oar with a handkerchief tied to it by which we might find our way back.

After floundering through water thick with lily-pads and rafts of the water-lettuce for perhaps two or three hundred yards, we got fair footing on a meadow of stiff, coarse grass which bordered the woods.

Heron were in sight in every direction. Will (my brother) was lucky enough to get the first shot, but he failed to hit, though the bird, a white heron (*Herodias egretta*), was standing in full view not more than forty yards from him. It rose and came over



"A white heron was standing in full view."

my head, giving me a good wing-shot. I let go at it, and, missing it, marked my arrow down in a puddle of water a hundred and fifty yards away. The reader, no doubt, will wonder how we could find our shafts after shooting them, but when he is told that they were furnished with two white and one broad red feather-vane, it will be understood, for an arrow always falls point downward and sticks up in the ground. We were not long in getting game, however. A Louisiana heron (*Demigretta ludoviciana*) soon fell to Will's share, and I brought a fine great blue heron (*Ardea herodias*) to bag. It was a pretty sight to see long, soldier-like lines of these stately birds stretched out along the marshy swales, standing each one as if on picket duty, still and solemn. They were not so wary and wild as they are when found in our Northern States, but it was no easy thing to get within good bow-shot of them. We kept very silent, however, and crept about in the grass like Indians, an arrow always ready-nocked on the string. The little green herons (*Butorides virescens*) were much trouble to us (as we did not want them), flying up before us constantly and scaring the larger game. The little blue heron, too, was everywhere. This bird (*Florida cærulea*) is one of the most beautiful of the herons; but the snowy heron (*Garzetta candidissima*) was the one we most desired to kill, and, of course, it was the hardest to approach. Go where we might, these grand snow-white birds could be seen just beyond bow-shot, apparently quite unaware of our existence, but we somehow always failed to get any nearer them. It must be understood that, in shooting large birds like these, very heavy broad-headed arrows are used, the utmost certain range of which is from sixty to eighty yards.

Finding that we must resort to cunning, we hit upon the plan of noting the exact spot where a snowy heron stood and then stealthily creeping upon it, under cover of grass, weeds, bushes, trees or any other object that offered. By this means we soon began to have some success. It is a curious fact, in connection with bow-shooting, that a bird, no matter how timid and wild, rarely is startled into flight by the first arrow that strikes near it, provided the archer is not seen. Therefore, the main thing for the hunter is to get a good hiding-place within reach of his bird; then, if his first shaft miss, he may get a second or third, or even fourth, shot before the game takes to flight. This gives him an advantage which will be well understood by every one who knows anything about bow-shooting, as after his first shot he can accurately calculate his aim. If his first shaft fall short, he will simply raise his point of aim a little, and if this carry the arrow beyond, then a little lower aim will bring the missile to about the right spot.

The opening, or marsh-glade, in which the pond was situated contained perhaps two or three hundred acres, and within that compass there appeared to be fully a thousand of the larger species of herons, whilst there must have been a far greater number of the smaller ones, to say nothing of bitterns, gallinules,



The home of the heron.

crying-birds (*Aramus giganteus*), and an occasional spoonbill and ibis. Besides, as I have said, the cypress wood was full of herons, so to speak. At that time railroads had not penetrated far into the peninsula of Florida, and very few hunters, if any, had ever reached the neighborhood of our camp. We remained there for the space of ten days, and in all our wandering saw but one native, a lank-looking young "Cracker" mounted on a thin little mule. He said that he was looking for some strayed cattle. But to return to our heron-shooting.

The plumes of the snowy heron are long and fine, draping the back from the shoulders to beyond the extremity of the tail. The central rib of these plumes is very slender and elastic, and the down or feather-fibers float about with every breath of wind like those of the ostrich plume. They are pure white. This bird

is not so large as the great blue heron, but it has a greater profusion of fine plumes. The great white heron (*H. egretta*) has white or yellowish white plumes, very long and beautiful, but they are stiffer than those of the snowy heron. All of the herons, in fact, have handsome plumes.

After we had experimented awhile, we began to have excellent sport, for there is nothing in the line of shooting so exciting as sylvan archery. To watch one's arrow go straight and hard, with its low whizzing sound, from one's bow to the bird, is a moment or two of intense suspense, expectation, and delight. Of course, one often misses; he is a fine archer, indeed, who hits half as often as he fails, but the exercise is so exhilarating that one does not mind his disappointments. Then, after all, taking into consideration that a bow does not frighten birds, as does a gun, and that the archer gets more shots than the gunner, it is probable that a first-rate bowman will get his fair share of game. I am quite sure that, in the long run, we killed more herons during our stay than we



A native.

would have killed had we been armed with guns, for with the latter, one day's shooting would have driven all the birds from the grounds. Be this as it may, we were entirely successful, as we often were afterward in many another wild region.

Some incidents connected with our heron-shooting may be given here as characteristic of bow-shooting in general. One fine bird at which I shot six

times in succession was killed by the last arrow, which flew at random. This happened in a very curious way. It was a great white heron standing in tall water-grass so that only its head and neck could be seen. I crept to within forty yards of it, and from behind a clump of custard-apple bushes began shooting. The position of its head and neck gave me a fair idea of about where its body was, I thought, but what was my surprise when arrow after arrow cut keen and clear through the grass at exactly the right spot without any effect! In spite of myself I became nervous, and my sixth shaft flew wild, striking in the grass about a foot or more in front of and some distance below the bird's beak, when utterly to my astonishment, with a great flapping of wings the game fell over. It had been looking behind it! At another time I shot three arrows at a Louisiana heron, standing with its back toward me, missing it each time. Just as I was ready to deliver the fourth shaft, the bird suddenly took to its wings and flew away in a direct line from me. I could not withhold my shot, but the movement of my game somewhat disarranged my aim. Away went my arrow, and as luck would have it, just high enough to hit the flying heron center in the back, fetching it down in excellent style.

The herons are all very interesting in their habits. Solemn, sedate, and moody in appearance, they nevertheless often show a great deal of vivacity; and in catching frogs and other live food, they disclose a smartness which, in birds so large, is quite comical at times. One of the Florida herons, indeed, is even provided by nature with a lantern attachment, and its phosphorescent breast-feathers disclose the home of the fishes, and aid it in its queer night-hunting. I have watched the great blue



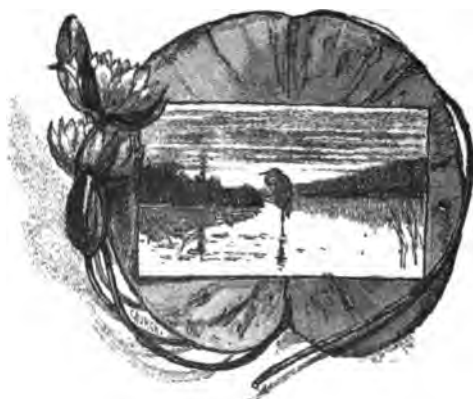
Heron with luminous breast.

heron in summer, on our small Northern streams and ponds, spearing frogs with its long, murderous bill. It walks slowly and slyly along the bank until it finds a place where a frog has leaped into the water, where it stops and stands as motionless as a stone, apparently asleep; but no sooner does the frog re-appear than, quick as a flash, down goes that long, keen beak, and the poor little creature is dead and swallowed!

The eggs of all the species of heron, so far as I now remember, are pale blue, or of a greenish-blue color; and in making their nests these birds appear to congregate for mutual protection from the hawks, the crows, and the grakles that annually destroy great numbers of their young and eggs.

A heron "rookery" is quite a sight in the nesting season. I have seen many acres of densely wooded swamp-land literally darkened and loaded with the birds and their big nests. Every available fork, or prong, bough, bush, or mat of vines, had its huge brushy pile with a heron solemnly sitting on it. In Florida, very often I found nests in custard-apple bushes, not over three feet from the water.

Of all our American birds, the heron is, to my eye, the most picturesque, both in pose and flight. No sketch or picture I ever have seen has done justice to any of the species. The beautiful little green heron has been grossly neglected by our artists, especially as regards its right to a conspicuous place among our brook birds; and the mistake is too often made of associating the great blue heron exclusively with stagnant water and dreary marshes, when the fact is that this species greatly delights in pure, clear rivulets and sparkling rivers. The finest specimen I ever killed I shot on a brook in Indiana. It measured over six feet across from wing-tip to wing-tip. Quite frequently in my rambles amongst the hills of North Georgia and North Alabama, I have seen three or four species of heron wading in the cold, clear mountain-spring streams, and I once found a pair of snowy herons nesting in a small cedar tree on the bank of the Tallulah River, surely a strange region for them to choose!



BOATS AND BOATING.

“Spread the thin oar and catch the driving gale.”
POPE.

SMALL BOATS: HOW TO RIG AND SAIL THEM.

BY CHARLES LEDYARD NORTON.



VERY many persons seem to ignore the fact that a boy who knows how to manage a gun is, upon the whole, less likely to be shot than one who is a bungler through ignorance, or that a good swimmer is less likely to be drowned than a poor one. Such, however, is the truth beyond question. If a skilled sportsman is now and then shot, or an expert swimmer drowned, the fault is not apt to be his own, and if the one who is really to blame had received proper training, it is not likely that the accident would have occurred at all. The same argument holds good with regard to the management of boats, and the author is confident that he merits the thanks of mothers, whether he receives them or not, for here giving their boys a few hints as to practical rigging and sailing.

In general, there are three ways of learning how to sail boats. First, from the light of nature, which is a poor way; second, from books, which is better; and third, from another fellow who knows how, which is best of all. I will try to make this article as much like the other fellow and as little bookish as possible.

Of course, what I shall say in these few paragraphs will be of small use to those who live within reach of the sea or some big lake, and have always been used to boats; but there are thousands and thousands of boys and men who never saw the sea, nor even set eyes on a sail, and who have not the least idea how to make the wind take them where they want to go. I once knew some

young men from the interior who went down to the sea-side and hired a boat, with the idea that they had nothing to do but hoist the sail and be blown wherever they liked. The result was that they performed a remarkable set of maneuvers within sight of the boat-house, and at last went helplessly out to sea. They had to be sent after and brought back, and they were, I can assure you, well laughed at for their performances, and had reason to consider themselves lucky for having gotten off so cheaply.

The general principles of sailing are as simple as the national game of "one old cat." That is to say, if the wind always blew moderately and steadily, it would be as easy and as safe to sail a boat as it is to drive a steady old family horse of good and regular habits. The fact, however, is that winds and currents are variable in their moods, and as capable of unexpected freaks as the most fiery of unbroken colts, but when properly watched and humored they are tractable and fascinating playmates and servants.

Now, let us come right down to first principles. Take a bit of pine board, sharpen it at one end, set up a mast about a quarter of the length of the whole piece from the bow, fit on a square piece of stiff paper or card for a sail, and you are ready for action. Put this in the water, with the sail set squarely across (A, Fig. 1), and she will run off before the wind,—which is supposed to be blowing as shown by the arrow,—at a good rate of speed.

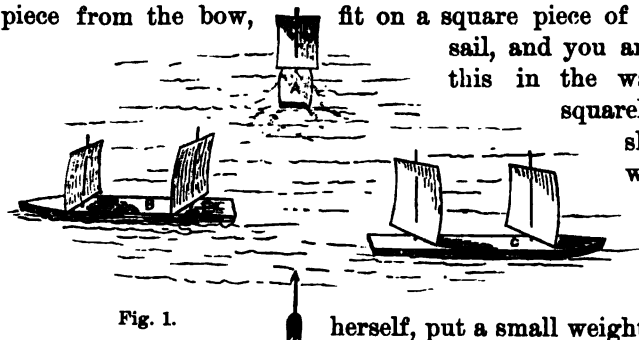


Fig. 1.

herself, put a small weight near the stern, or square end; or, if you like, arrange a thin bit of wood for a rudder.

Probably the first primeval man who was born with nautical instincts discovered this fact, and, using a bush for a sail, greatly astonished his fellow-primevals by winning some prehistoric regatta. But that was all he could do. He was as helpless as is a balloonist in mid-air. He understood nothing about jibing or tacking, and could not "come about," however much he wished to. He could go, but he could not get back, and we may be sure that ages passed away before the possibility of sailing to windward was discovered.

Now, put up, or "step," another mast and sail like the first, about as far from the stern as the first is from the bow. Turn the two sails at an angle of forty-five degrees across the boat (B or C, Fig. 1), and set her adrift. She will make considerable progress across the course of the wind, although she will at the same time drift with it. If she wholly refuses to go in the right direction, place a light weight on her bow, so that she will be a little "down by the head," or move the aftermost mast and sail a trifle nearer to the stern.



The young yachtsman.

The little, rude affair, thus used for experiment, will not actually make any progress to the windward, because she is so light that she moves sidewise almost as easily as she does forward. With a larger, deeper boat, and with sails that can be set at any angle, the effect will be different. So long as the wind presses against the after side of the sail, the boat will move through the water in the

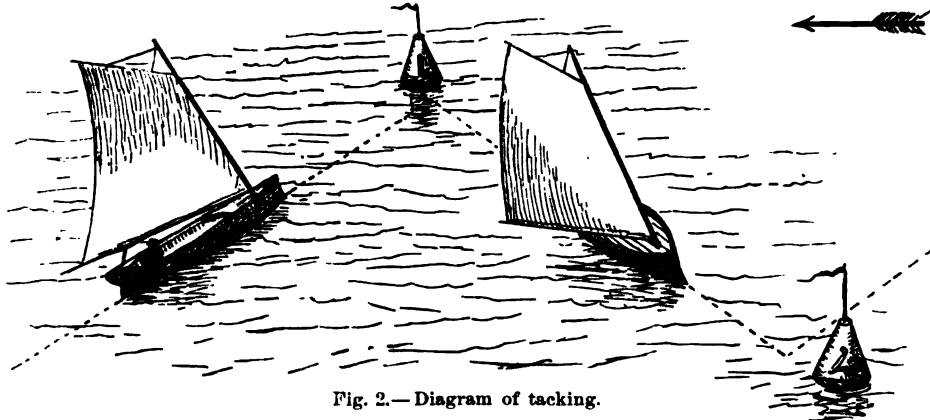


Fig. 2.—Diagram of tacking.

direction of the least resistance, which is forward. A square sail, having the mast in the middle, was easiest to begin with for purposes of explanation; but now we will change to a "fore-and-aft" rig,—that is, one with the mast at the forward edge or "luff" of the sail, as in Fig. 2. Suppose the sail to be set at the angle shown, and the wind blowing as the arrow points. The boat can not readily move sidewise, because of the broadside resistance; she does not want to move backward, because the wind is pressing on the aftermost side of the sail. So she very naturally moves forward. When she nears buoy No. 1, the helmsman moves the "tiller," or handle of the rudder, toward the sail. This causes the boat to turn her head toward buoy No. 2, the sail swings across to the other side of the boat and fills on the other side, which now in turn becomes the aftermost, and she moves toward buoy No. 2, nearly at right angles to her former course. Thus, through a series of zigzags, the wind is made to work against itself. This operation is called "tacking," or "working to windward," and the act of turning, as at the buoys No. 1 and No. 2, is called "going about."

It will be seen, then, that the science of sailing lies in being able to manage a boat with her head pointing at any possible angle to or from the wind. Nothing but experience can teach one all the niceties of the art, but a little aptitude and address will do to start with, keeping near shore and carrying little sail.

I will suppose that the reader has the use of a broad flat-bottomed boat, without any rudder. (See Fig. 3.) She can not be made to work like a racing yacht under canvas, but lots of fun can be had out of her.

Do not go to any considerable expense at the outset. Procure an old sheet, or an old hay-cover, six or eight feet square, and experiment with that before spending your money on new material. If it is a sheet, and somewhat weakly in its texture, turn all the edges in and sew them, so that it shall not give way at the hems. At each corner, sew on a few inches of strong twine, forming loops at the angles. Sew on, also, eyelets or small loops along the edge which is intended for the luff of the sail, so that it can be laced to the mast.

You are now ready for your spars, namely, a mast and a "sprit," the former a couple of feet longer than the luff of the sail, and the latter to be cut off when you find how long you want it. Let these spars be of pine, or spruce, or bamboo, as light as possible, especially the sprit. An inch and a half diameter will do for the mast, and an inch for the sprit. To "step" the mast, bore a hole through one of the thwarts (seats) near the bow, and make a socket, or step, on the bottom of the boat, just under the aforesaid hole,—or if anything a trifle farther forward,—to receive the foot of the mast. This will hold the mast upright, or with a slight "rake" aft.

Lace the luff of the sail to the mast so that its lower edge will swing clear by a foot or so of the boat's sides. Make fast to the loop at D a stout line, ten or twelve feet long. This is called the "sheet," and gives control of the sail. The upper end of the sprit, C E, is trimmed so that the loop at C will fit over it but not slip down. The lower end is simply notched to receive a short line called a "snotter," as shown in the detailed drawing at the right of the cut. It will be readily understood that, when the sprit is pushed upward in the direction of C, the sail will stand spread out. The line is placed in the notch at E and pulled up until the sail sits properly, when it is

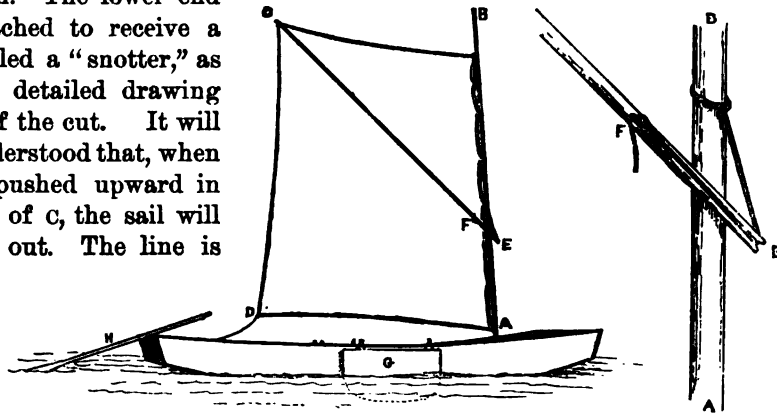


Fig. 3.—A simple rig.

made fast to a cleat, or to a cross-piece at F. This device is in common use and has its advantages; but a simple loop for the foot of the sprit to rest in is more easily made and will do nearly as well. H is an oar for steering. Having thus described the simplest rig possible, we may turn our attention to more elegant and elaborate, but not always preferable outfits.

One of the prettiest and most convenient rigs for a small boat is known as the "leg-of-mutton sharpie rig" (Fig. 4). The sail is triangular, and the sprit,

instead of reaching to its upper corner, stands nearly at right angles to the mast. It is held in position at the mast by the devices already described. This rig has the advantage of keeping the whole sail flatter than any other, for the end of the sprit can not "kick up," as the phrase goes, and so the sail holds all the wind it receives.

Fig. 5 shows a peculiar and highly serviceable device, which enables the sailor to step and unstep his mast, and hoist or lower his sail without leaving

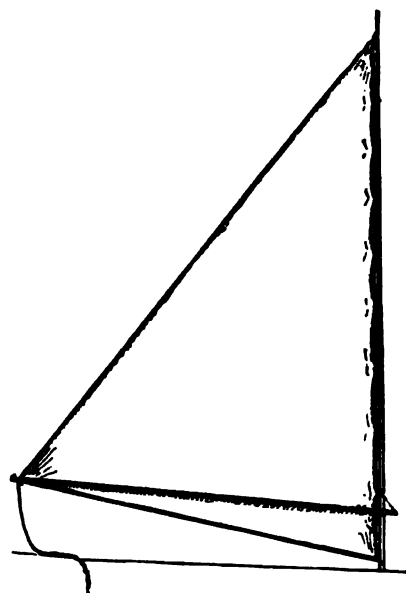


Fig. 4.—Leg-of-mutton rig.

his seat—a matter of great importance when the boat is light and "tottlish," as in the case of that most beautiful of small craft, the modern canoe, where the navigator sits habitually amidships. The lower mast (A B, Fig. 5) stands about two and a half feet above the deck. It is fitted at the head with a metal ferrule and pin, and just above the deck with two half-cleats or other similar devices (A). The topmast (C D) is fitted at F with a stout ring, and has double halyards (E) rove through, or around its foot. The lower mast being in position (see upper part of cut), the canoeist desiring to make sail brings the boat's head to the wind, takes the topmast with the sail loosely furled in one hand, and the halyards in the other. It is easy for him by raising this mast, without leaving his seat, to pass the halyards one on each side of the lower mast and let them fall into place close to the deck, under the

half-cleats at A. Then, holding the halyards taut enough to keep them in position, he will hook the topmast ring over the pin in the lower mast-head, and haul away (see lower part of cut). The mast will rise into place, where it is made fast. A collar of leather, or a knob of some kind, placed on the topmast just below the ring, will act as a fulcrum when the halyards are hauled taut, and keep the mast from working to and fro.

The advantages of the rig are obvious. The mast can be raised without standing up, and in case of necessity the halyards can be let go and the mast and sail unshipped and stowed below with the greatest ease and expedition, leaving only the short lower mast standing. A leg-of-mutton sail with a common boom along the foot is shown in the cut as the most easily illustrated application of the device, but there is no reason why it may not be applied to a sail of different shape, with a sprit instead of a boom, and a square instead of a pointed head.

The "latteen rig" is recommended only for boats that are "stiff"—not tottlish, that is. The fact that a considerable portion of the sail projects forward of the mast renders it awkward in case of a sudden shift of wind. Its most convenient form is shown in Fig. 6. The arrangement for shipping and unshipping the yard is precisely like that shown in Fig. 5—a short lower mast with a pin at the top and a ring fitted to the yard. It has a boom at the foot, which is joined to the

yard at C by means of a hook or a simple lashing having sufficient play to allow the two spars to shut up together like a pair of dividers. The boom (C E) has, where it meets the short lower mast, a half-cleat or jaw, shown in detail at the top of the cut—the circle representing a cross section of the mast. This should be lashed to the boom, as screws or bolts weaken it. To take in sail, the boatman brings the boat to the wind, seizes the boom and draws it toward him. This

disengages it from the mast. He then shoves it forward, when the yard (C D) falls of its own weight into his hands, and can be at once lifted clear of the lower mast. To keep the sail flat, it is possible to arrange a collar on the

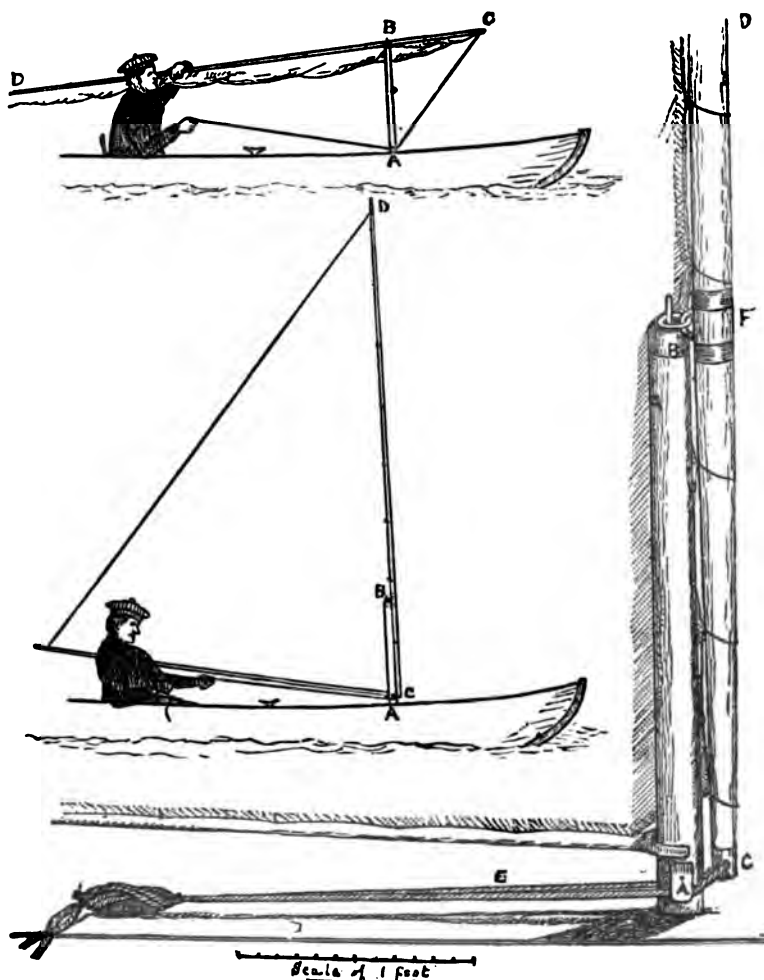


Fig. 5.—A labor-saving device.

lower mast so that the boom, when once in position, can not slip upward and suffer the sail to bag.

The "balance-lug" (shown in Fig. 7) is deservedly popular with canoeists. It has a yard at the head and a boom at the foot, and is hoisted and lowered by

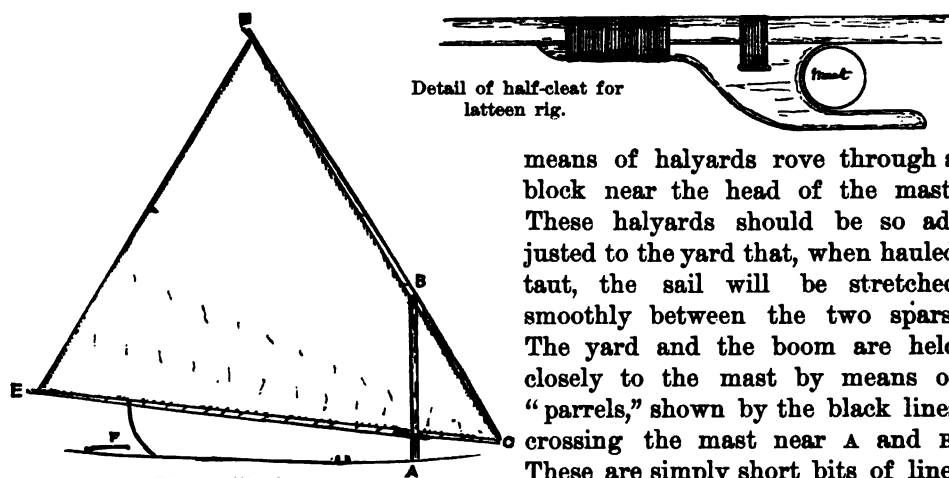


Fig. 6.—The latteen rig.

means of halyards rove through a block near the head of the mast. These halyards should be so adjusted to the yard that, when hauled taut, the sail will be stretched smoothly between the two spars. The yard and the boom are held closely to the mast by means of "parrels," shown by the black lines crossing the mast near A and B. These are simply short bits of line, or straps, fastened to the spars and

passing on other side of the mast. They hold the spars closely enough to the mast for practical purposes, and yet suffer the yard to slide readily up and down. The halyard is sometimes made fast to the yard-parrel, so that in hoisting it acts on both parts of the yard at once. The boom must be fastened near the foot of the mast, so that it can swing freely, but can not be hoisted higher than is desired, and will not let the sail bag too much.

The "cat-rig," so popular on the North-Atlantic coast, is indicated in Fig. 2. The spar at the head of the sail is called a "gaff," and, like the boom, it fits the mast with semicircular jaws. The sail is hoisted and lowered by means of halyards rove through a block near the mast-head. The mast is set in the bows,— "chock up in the eyes of her," as a sailor would say. A single leg-of-mutton sail will not work in this position, because the greater part of its area is too far forward of amidships. No rig is handier or safer than this in working to windward; but off the wind,—running before, or nearly before it, that is,—the weight of mast and sail, and the pressure of the wind at one side and far forward, make the boat very difficult and dangerous to steer. Prudent boatmen often avoid doing so by keeping the wind on the quarter and, as it were, tacking to leeward.

This suggests the question of "jibing," an operation always to be avoided if possible. Suppose the wind to be astern, and the boat running nearly before it. It becomes necessary to change your course toward the side on which the

sail is drawing. The safest way is to turn at first in the opposite direction, put the helm "down" (toward the sail), bring the boat up into the wind, turn her entirely around, and stand off on the new tack. This, however, is not always possible. Hauling in the sheet until the sail fills on the other side is "jibing"; but when this happens, it goes over with a rush that sometimes carries away mast and sheet, or upsets the boat; hence the operation should be first undertaken in a light wind. It is necessary to know how to do it, for sometimes a sail insists upon jibing very unexpectedly, and it is best to be prepared for such emergencies.

For the sails of such boats as are considered in this paper, there is no better material than unbleached, twilled cotton sheeting. It is to be had two and a half or even three yards wide. In cutting out your sail, let the selvage be at the "leech," or aftermost edge. This, of course, makes it necessary to cut the luff and foot "bias," and they are very likely to stretch in the making, so that the sail will assume a different shape from what was intended. To avoid this, baste the hem carefully before sewing, and "hold in" a little to prevent fulling. It is a good plan to tack the material on the floor before cutting, and mark the outline of the sail with pencil. Stout tape stitched along the bias edges will make a sure thing of it, and the material can be cut, making due allowance for the hem. Better take feminine advice on this process. The hems should be half an inch deep all around, selvage and all, and it will do no harm to reënforce them with cord if you wish to make a thoroughly good piece of work.

For running-rigging, nothing is better than laid or braided cotton cord, such as is used for awnings and sash-cords. If this is not easily procured, any stout twine will answer. It can be doubled and twisted as often as necessary. The smallest manilla rope is rather stiff and unmanageable for such light sails as ours.

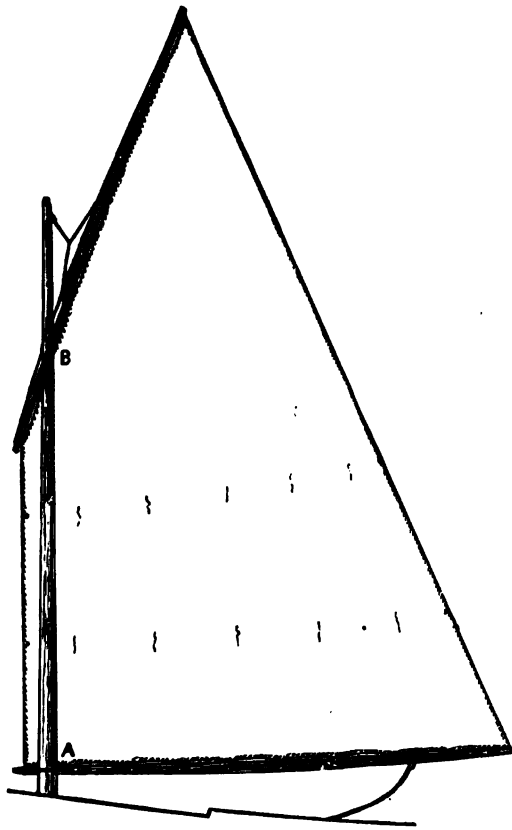


Fig. 7.—The balance-lug.

In fitting out a boat of any kind, iron, unless galvanized, is to be avoided as much as possible, on account of its liability to rust. Use brass or copper instead.

Nothing has been said about reefing thus far, because small boats under the management of beginners should not be afloat in a "reefing breeze." Reefing is the operation of reducing the spread of sail when the wind becomes too fresh. If you will look at Figs. 6 and 7 you will see rows of short marks on the sail above the boom. These are "reef-points"—bits of line about a foot long passing through holes in the sail, and knotted so that they will not slip. In reefing, the sail is lowered and that portion of it between the boom and the reef points is gathered together, and the points are tied around both it and the boom. When the lower row of points is used it is a single reef. Both rows together are a double reef.

Make your first practical experiment *with a small sail and with the wind blowing toward the shore*. Row out a little way, and then sail in any direction in which you can make the boat go, straight back to shore if you can, with the sail out nearly at right angles with the boat. Then try running along shore with the sheet hauled in a little, and the sail on the side nearest the shore. You will soon learn what your craft can do, and will probably find that she will make very

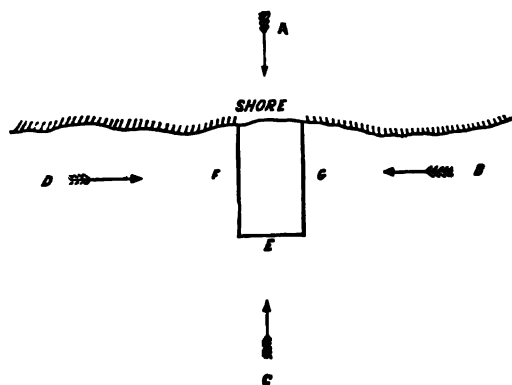


Fig. 8.—Making a landing.

little, if any, headway to windward. This is partly because she slides sideways over the water. To prevent it you may use a "lee-board"—namely, a broad board hung over the side of the boat (a, Fig. 3). This must be held by stout lines, as the strain upon it is very heavy. It should be placed a little forward of the middle of the boat. It must be on the side away from the wind,—the lee side,—and must be shifted when you go about. Keels and center-boards are permanent con-

trivances for the same purpose, but a lee-board answers very well as a make-shift, and is even used habitually by some canoeists and other boatmen.

In small boats it is sometimes desirable to sit amidships, because sitting in the stern raises the bow too high out of water; steering may be done with an oar over the lee side or with "yoke-lines" attached to a cross-piece on the rudder-head, or even to the tiller. In this last case, the lines must be rove through rings or pulleys at the sides of the boat opposite the end of the tiller. When the handle of the oar H (Fig. 3),—or the tiller F (Fig. 6), if a rudder is used—is pushed to the right, the boat will turn to the left, and *vice versa*. The science



Too much canvas.

of steering consists in knowing when to push and how much to push—very simple, you see, in the statement, but not always so easy in practice.

The sail should be so adjusted in relation to the rest of the boat that, when the sheet is hauled close in and made fast, the boat, if left to herself, will point her head to the wind like a weather-cock, and drift slowly astern. If it is found that the sail is so far forward that she will not do this, the fault may be remedied by stepping the mast farther aft, or by rigging a small sail near the stern. This is called a "dandy" or "steering-sail," and is especially convenient in a boat whose size or arrangement necessitates sitting amidships. It may be rigged like the mainsail, and when its sheet is once made fast will ordinarily take care of itself in tacking.

Remember that if the wind freshens or a squall strikes you, the position of safety is with the boat's head to the wind. When in doubt what to do, push the helm down (toward the sail), and haul in the slack of the sheet as the boat comes up into the wind. If she is moving astern, or will not mind her helm,—and of course she will not if she is not moving,—pull her head around to the wind with an oar, and experiment cautiously until you find which way you can make her go.

In making a landing, always calculate to have the boat's head as near the wind as possible when she ceases to move. This, whether you lower your sail or not.

Thus, if the wind is off shore, as shown at A (Fig. 8), land at F or G with the bow toward the shore. If the wind is from the direction of B, land at E with the bow toward B, or at F; if at the latter, the boom will swing away from the wharf and permit you to lie alongside. If the wind is from D, reverse these positions. If the wind comes from the direction of C, land either at F or G, with the bow pointing off shore.

If you have no one to tell you what to do, you will have to feel your way slowly and learn by experience; but, if you have nautical instincts, you will soon make your boat do what you wish her to do, as far as she is able. *But first learn to swim before you try to sail a boat.*

Volumes have been written on the subject briefly treated in these few pages, and it is not yet exhausted. The hints here given are safe ones to follow, and will, it is hoped, be of service to many a young sailor in many a corner of the world.





HOW TO MAKE A BOAT.

BY FREDERIC G. MATHER.

ALMOST all boys who live near the water want to own a boat, and it very often happens that the only way they can get one is to build it themselves. It is very well to do this, for, when they have done their work well, they get not only a boat, but some excellent experience in mechanical construction, which can scarcely fail to be of use to them.

The object of this article is to tell boys how, with a good deal of labor and a very little money, they can build a boat for themselves.

Any boy who can use a plane, a saw, a bit-stock, and a drawing-knife, can easily build a boat like the one of which we are to give the history from the time she existed in the form of boards until she floated gracefully in the water.

In the first place, you must go to the lumber-yard or mill, and select two boards of clear pine, eleven or twelve feet long and one inch thick. One should be wider than the other; but together they should make a width of twenty-five inches. Have them planed on both sides, and a groove planed out of the edge of one board and a tongue out of the corresponding edge of the other board. When you have taken the boards home, buy a two-pound can of white lead. Fill the groove with this lead; then put the boards together, and drive the tongue of one into the groove of the other. This will make the joint water-tight. To keep the boards from spreading, tack three or four strips across the crack, and lay the whole on the floor with the strips downward.

You will then have what is the same as one board, eleven or twelve feet long and not less than two feet wide. This we will call the bottom board (Fig. 1).

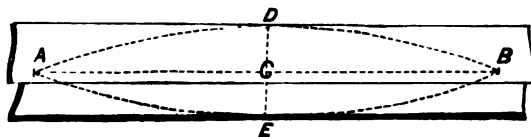


Fig. 1.—The bottom board.

The next thing to do is to sweep the floor of your workshop, so that there will be a clear space of about fifteen feet square. Place the bottom board at one edge of the space thus cleared, and draw the line *A B*, which divides the width into equal parts. Draw *D E* at right angles to *A B*. The points *A* and *B* should be five feet three inches from *C*; and *D* and *E*, each one foot from the same. This will make *A B* ten feet six inches, and *D E*, two feet.

To mark the curved line *A E B*, drive a nail in the floor in the direction of *D*, and about fourteen feet three inches from *E*. Having made a loop at the end of a piece of wire (string will stretch too much to be accurate), you must bring the wire to the point *E*. The wire is your radius, and your object is to hold a pencil at such a point that it will pass through the points *A*, *E* and *B*. Your pencil will easily hit *A* and *B*. If it falls outside of *E*, you must move the board away from the nail; if it falls between *C* and *E*, the radius is too long, and the board must be moved toward the nail. Having found the exact spot, draw the curved line *A E B*. Then turn the board around, end for end, and mark the line *A D B* in the same manner. Now, saw carefully along the curved lines, and you will have cut out the bottom of your boat.

The next step is to bevel the edges just sawed; that is, to cut the wood away from the under side of the edge of the bottom board, so that the side boards will easily be fitted to it.

At *H* (Fig. 2) is an angle of 120 degrees. The under edge must be cut off at this angle; but, as you come toward the end, cut away less and less of the under edge, until at *F* you cut away scarcely any. Bevel the entire edge in the same way, taking great care to change the bevel gradually and uniformly.

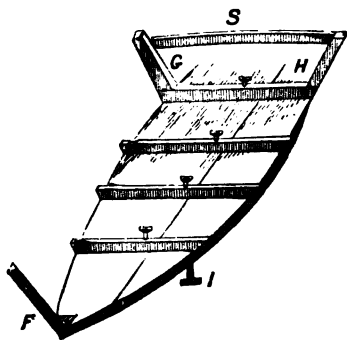


Fig. 2.—The braces and ribs.

You must now fasten some hard-wood strips, one inch square, upon the bottom. Lay one in the middle (*G H*), and three toward each end, about thirteen inches apart. Let them be long enough for the ends to project an inch over each side. Drive an inch-and-a-half screw through the middle of each strip into the bottom.

Then turn over the bottom board and drive from four to six screws the other way, as at *I*, taking care to drive screws into each strip not more than an inch from the crack between the boards, and not more than that distance from the outer edge.

You would do well to put these screws in first, and afterward put in as many others as may be necessary to keep the bottom from warping. Use the gimlet and countersink, and dip the screws into oil or paint before driving them. The heads of all the screws, which are drawn large in the cut so as to show distinctly, should be below the surface.

The ends of the strips, or braces as we will now call them, should be sawed off to correspond with the bevel of the edge which is just below them.

You will now need fourteen pieces of the inch-square hard-wood. They are for the ribs, and each one should be one foot long. Fit one of the ribs to each end of the middle brace, so that the angles at G and H will be 120 degrees. Fasten the ribs to the brace by an angle-iron (H), which any blacksmith can make. A temporary brace (S) should be nailed into the ribs, G and H. A triangular piece (F), called the "dead-wood," is fastened with a block at an angle of 120 degrees with the bottom.

You must do the same with the other end of the bottom, which does not show in Fig. 2. You will then have seven braces, two ribs, and two dead-woods, all fastened to the bottom of the boat.

The boards for the sides should be of half-inch pine or three-eighths-inch ash. They should be of uniform thickness, with both sides smoothly planed. The length, fourteen feet; and the breadth, fourteen inches. Mark the exact middle of one of the boards, and place that mark against the rib H (Fig. 3). Let the lower edge project four inches below the bottom, and fasten the side to the rib with about five screws.

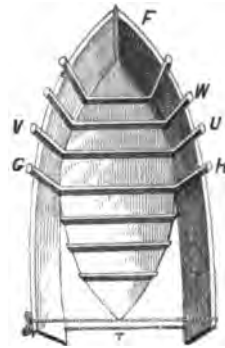


Fig. 3.—The sides.

Now fasten the other side to the rib G in like manner. Tie a string around the ends at T, so that they will not spread. Bring the other ends, at F, as near to each other as possible, and confine them with a string. Commence at H to fasten the side upon the bottom. Put in inch-and-a-quarter screws, about three inches apart. When you have reached the first brace, put the rib U in place and fasten it.

Pass to the other side, and fasten the bottom edge from G to V, and also the rib V. Return now to the first side, and fasten from U to W and the rib W.

Do this alternately until you are within a foot of the end, F. You will then be obliged to cut off the ends of the side boards, in order to bring them up to the dead-wood at F.

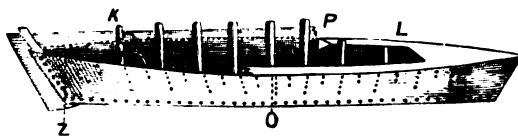


Fig. 4.—The deck and curved braces.

This process is shown more plainly in Fig. 4. Your boat now looks something like Fig. 3; and the same course is to be followed as you commence at G and H and fasten toward the end, T.

The edge of the boat is rough, and the ribs project, as appears from K to P in Fig. 4. Having marked O, nine inches, and Z, eleven inches, you must trace a gradual curve each way from the middle. Be very careful about this, especially

as you saw through ribs and all while following the mark. One edge in Fig. 4 is cut off in this way. The under edge is easily trimmed so as to be even with the lower surface of the bottom board.

The ribs nearest the ends should be connected at the top by the curved braces, K and L. A straight brace should extend from the middle of the curved brace to the top of the dead-wood. The corners which were left when you sawed out the bottom will now be of use. From them you can cut sixteen triangular pieces for brackets to support the deck. Let these brackets be upon each edge, seven, six, and five inches respectively. They are to be fastened half-way between the ribs with screws from the outside. The screws enter the edge which is six inches long, leaving the five-inch edge to receive the deck. Quarter-inch pine makes the best deck, and the fewer pieces in the deck the better it will be. The greatest breadth of the boat across the deck will vary, according to the manner in which you have done the work. It ought to be about three feet two inches, and the extreme length twelve feet. For security, it is well to fix a ring and staple in each end of the deck.



Fig. 5.—Iron support for oar-lock.

Benches or stools make good seats, but these you can arrange according to your fancy. A false bottom of slats will help to preserve the true bottom. You can fit a rudder to either end, if you choose.

A paddle can be used to good effect in propelling such a boat as this, but oars are better. For oar-locks you can have simple pegs set in a block, which is firmly screwed to the edge of the deck; or you can buy iron oar-locks which fit into a hole in a block which is fastened as above; or you can have iron arrangements like Fig. 5 made at the blacksmith's. There may be two of these, each made of inch horseshoe iron. They pass through plates of one-eighth-inch iron, screwed into the deck and into the bottom, and are eighteen and a half inches long. They are straight for thirteen inches of this length, and are finished with a thimble in which the pin of the iron oar-lock can play.

All the carpenter-work of the boat is now completed, and you must turn your attention to the painting. After the first coat, or priming, paint two other coats of whatever color you wish. Upon your choice of a color for the body will depend the color for the trimmings. If your own taste is not reliable, perhaps your friends will advise you how to paint.

At length, having followed these directions, you will have the satisfaction of launching your craft; and if it be carefully constructed, it will prove to be a very safe and a very useful boat, and not least among the pleasures you will experience will be that of having made it all yourself.



HOW TO BUILD A CATAMARAN.

BY W. L. ALDEN.

EVERY boy knows how hard it is to get permission to go sailing. His mother is sure he will be drowned, and his father tells him to be "careful" in a way that clearly shows his wish that sail-boats had never been invented. And though the boy himself says, "There is no danger," he knows, if he is familiar with sailing, that there is nothing easier than to capsize a cat-boat by a moment's carelessness or a little recklessness.

Now, if a boy had a boat which could neither capsize nor sink, no reasonable mother would feel any uneasiness as to his being drowned. If at the same time this boat could outsail any ordinary sail-boat; could carry twice as many people as a cat-boat of the same length; could be taken out of the water and carried over a reef or a dam by two boys; and could be built by any intelligent boy who is handy with his tools, at a very slight expense, would it not be just the thing that every boy ought to have?

The boat in question is what is called a catamaran — that is, a boat with two hulls. It is not so fast as the wonderful Herreschoff catamaran, but it is a great deal cheaper, drier, and more roomy, and is in every way better suited for cruising. Moreover, a boy can have the pleasure of building it himself, and there is no better fun than building a boat which, when it is launched, answers all your expectations.

The first thing you need to do is to send to a lumber-yard or saw-mill for four good pine planks, fifteen feet long, eighteen inches wide, one inch thick, and

planed on both sides. It may be necessary to have them sawed to order at the mill, as they are unusually large. The rest of the lumber that you will want can be had at any carpenter's shop, and a good deal of it you may be able to find at home in the shape of old boxes and strips of wood.

Put two of the four planks aside, and busy yourself at first only with the other two. Planks of this size, if put in the water, would be sure to warp. To prevent this, screw across one side of each plank four strips of wood, about three inches wide by three-quarters of an inch thick. These should

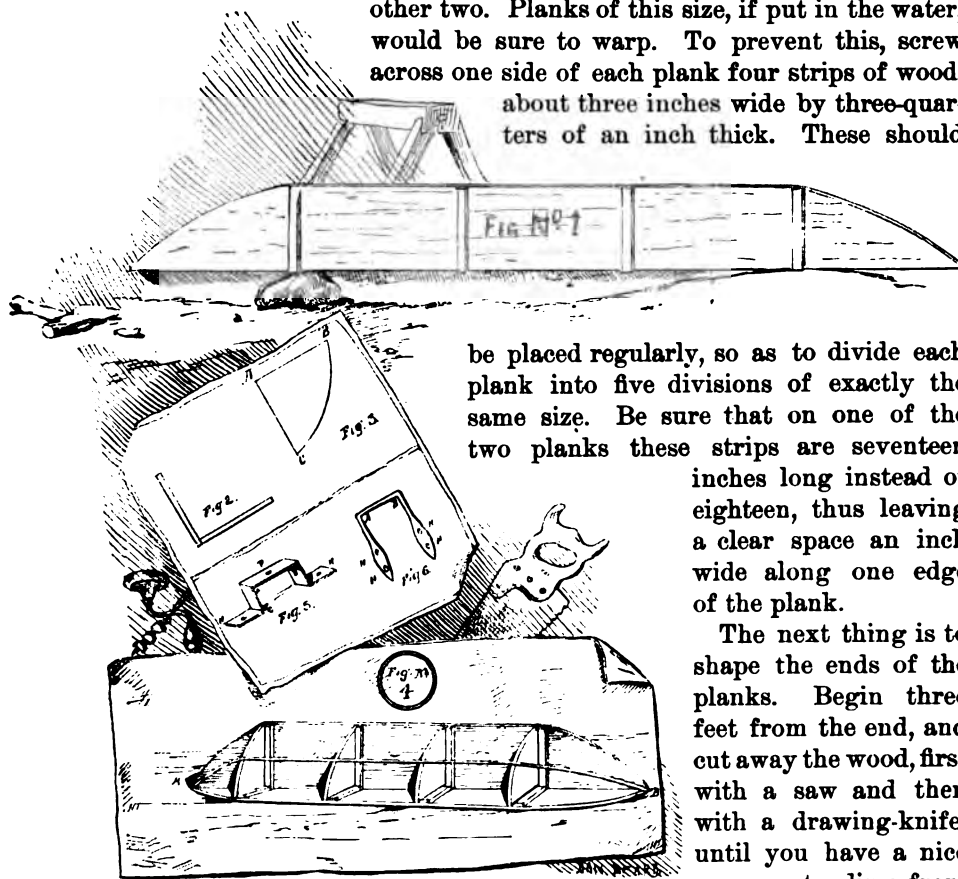


Diagram of a catamaran.

be placed regularly, so as to divide each plank into five divisions of exactly the same size. Be sure that on one of the two planks these strips are seventeen inches long instead of eighteen, thus leaving a clear space an inch wide along one edge of the plank.

The next thing is to shape the ends of the planks. Begin three feet from the end, and cut away the wood, first with a saw and then with a drawing-knife, until you have a nice curve extending from the point where you

began to cut to the end of the plank. When you are satisfied with this curve (which is to be the bow of your boat), lay the plank down on the other uncut plank and mark out on it precisely the same curve. As you proceed, study carefully the different figures (1 to 6) in the diagram presented above, as they include the various requisites in the hulls of your catamaran. After the planks on which you have fashioned the bows of your boat have been cut, take the other end of the two planks, shape them in the same way, taking great care that each one

of the four curves shall be precisely like every other one. The way they will look after this part of the work is done is shown in Fig. No. 1.

Now lay one plank flat on the floor, with the side on which the strips are fastened uppermost. Take the other plank—the one with the seventeen-inch



A safe craft.

strips—and stand it up on its edge close against the one on the floor, having first white-leaded both the edges that are to touch. (See Fig. 2.)

You will now see why the strips on one plank were shorter than the other strips, for this has enabled you to bring the edges of the planks close together. Nail these edges together with galvanized iron nails, using a good many of them, and taking great care not to split the wood.

The next thing is to cut four pieces of three-quarter-inch plank into the shape diagrammed in Fig. 3.

The side A B is seventeen inches long, and the side A C eighteen inches. These sides must form a true right angle, and be made very smooth and straight. When the four pieces are finished, white-lead the edges and place them between the two planks, so that they will lie close to the strips which you secured to the planks to prevent them from warping. Fasten them with long galvanized screws, carefully countersinking the heads. Then run a strip of quarter-inch white cedar, two inches wide, from A to B, cutting mortises in the curved edge of the four triangular pieces of wood to secure it. (See Fig. No. 4.)

You have now the frame-work of one of the hulls of your catamaran. While the chief object of the triangular pieces of wood is to brace the two planks, they are also meant to divide the hull into water-tight compartments, and so you can not be too careful to make the joints water-tight.

Now we need some iron-work, and must depend on the blacksmith to make it for us. We want three iron sockets (for, since they will be used as sockets, we

might as well call them sockets) of the shape indicated in Fig. 5, made out of iron, rather more than an eighth of an inch thick.

From A to B is four inches, and from A to C the same. The iron should be an inch and a half wide, and the two holes, H and H, should be large enough for a quarter-inch bolt.

When the blacksmith has made these, then have him make three other sockets out of half-inch rod-iron, hammering the ends flat and piercing them with holes countersunk for screws. (See Fig. 6.)

This round-iron socket is four inches wide, and each arm ten

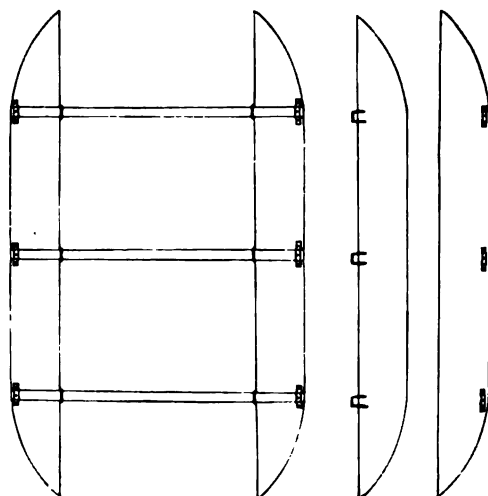


Fig. 7.

Fig. 8.

inches long. The holes (H) are for quarter-inch bolts. Order a double set of each of these sockets, as you will need three of each kind for each hull. The flat sockets are to be placed on the upper side of your hull—the side which is eighteen inches wide, the other side being an inch narrower. One is to be placed exactly half-way between the two ends of the plank, and the others exactly three feet each from either end, and they should all be placed about three inches from the outer edge of the planks. These positions are indicated in diagrams 7 and 8, given above.

The other sockets are to be placed in the other plank precisely on a line with the first three. Use screw-bolts, with nuts for fastening all the sockets, and put

a thin leather washer under the part of the iron, through which the bolt passes, and an oak washer under the nut on the other side. Screw them on as tightly as possible, and put plenty of white lead on the under side. The iron and the bolts ought to be galvanized, but if you live in the country, you may not be able to have this done.

Your hull is now nearly ready to be covered with canvas, but first you should give the inside a thick coat of paint, and bore an inch hole through the middle of the upper plank into each water-tight compartment. Plug the holes with corks, and should your hull spring a leak at any time, it will always be possible for you to pump or empty out the water. The canvas should be well oiled and dried before it is used, and should be forty inches wide. Place the keel—or the part of the hull where the keel ought to be—in the middle of the canvas, and tack it with copper tacks to the lower edge of the plank, except on the two ends where the plank is curved. Then bring the edges of the canvas around both sides of the hull to the upper plank, and tack them firmly. To fit the canvas to the curves at the bow and stern is a more difficult task, but it can be done with the exercise of care and judgment. Perhaps your mother could help you in this matter with her womanly ingenuity in handling cloth. Remember when you are putting on the canvas to strain it as tightly as possible.

Along the lower edge of the side plank you must fasten an oak or ash keel a quarter of an inch thick, putting it on with screws, and painting the canvas under it just before you put it on. By soaking it in hot water—or, what is better, steaming it—you can bend it to fit the bow and stern. Strips an eighth of an inch thick should be screwed to the outer edges of each of the triangular pieces of wood that form the water-tight compartments, thus making the canvas fit more closely to them than it would were it fastened only with tacks. After all is done, give the entire hull two heavy coats of paint, and you can feel reasonably confident that it will not leak.

One hull is now finished, and the second, which is to be precisely like it in every respect, can be built in much less time than the first one, thanks to the experience you have gained. When they are all ready, place them with their flat sides toward one another and seven feet apart. Then take three pine joists four inches square and nine feet long, and push them through the iron sockets, fastening them with iron pins, dropped (not driven) through the holes in the middle of the flat sockets. In the drawing of the socket (Fig. 5), the hole for the pin is marked P. These pins will prevent the joists from slipping in either direction.

The catamaran is now ready for her deck. This is simply a platform, nine feet square, made of planks a quarter of an inch thick and six inches wide. It is to be made double, the upper layer of planks running fore and aft, the under layer running at right angles to the upper. Fasten them firmly together with clinched copper nails, and finally nail a quarter-inch strip of oak all around

the platform, so as to keep the water from the edges of the planks. Every seam on both sides must be carefully filled with white lead.

The deck is to be fastened to the joists or deck-beams with screw-bolts, and grooves must be cut in it to receive the upper part of the iron sockets, so that it will lie flat on the deck-beams. Four good-sized bolts will hold it firmly. An iron ring of the same thickness as the iron used for the flat sockets, and supported by three iron legs in the shape of a tripod about eighteen or twenty inches long, two of which should be bolted (with screw-bolts) to the forward deck-beam, and the third to the deck itself, will support the mast, the foot of which will rest in a wooden step. A somewhat similar piece of iron-work, with a row-lock in place of the ring, must be bolted to the aftermost deck-beam, to hold the oar with which the boat is to be steered, and also to enable you to scull her in case you are becalmed.

Before rigging the boat, take an ordinary eight-foot "A" tent and pitch it on the deck, fastening the corners and the sides to little brass rings screwed into the deck—the kind that will lie down flat when not in use. Inside of the tent, and just where the four ends are fastened, nail narrow strips of wood, a quarter of an inch thick, to the deck. These will keep the water out when it rains.

Now, take away your tent and rig your boat. The sail should be fifteen feet in the boom, nine feet in the gaff, fifteen feet in the luff,—or the edge nearest the mast,—and nineteen feet in the leech. You had better get a sail-maker to make the sail, which is the only part of the work which you can not do well yourself. Put a big ring-bolt in the forward deck-beam to make your cable fast to when you anchor, and also to hold your painter when you want to make the boat fast to the dock. Put a long oar on board to steer with, and you are now ready to set sail.

It would be a good plan to put a little railing, if it were only an inch high, around the deck, so as to keep things from sliding overboard. This will also serve as a rail or gunwale for the greater peace of mind of timid voyagers, although the catamaran by its very construction is the most enjoyable way of introducing those afraid of the water to the pleasures of boating. All iron-work that is not galvanized should be thoroughly painted, and whenever a screw is used it should be dipped in white lead, and its head covered with the same material after it is driven home.

You will find that it is impossible to capsize your catamaran. The mast and sail would be torn out by the wind long before it would blow hard enough to bury one hull and lift the other out of water. The boat will sail fast either before or on the wind, and, with the help of the steering oar, will tack easily. Of course, if you run on the rocks, you will knock a hole in the canvas, but such an injury can be easily repaired, and the deck will float, even were both hulls full of water.

There is no better boat to cruise in than such a catamaran. At night you anchor her, unship your mast, pitch your tent, and sleep safely and comfortably. If you come to a dam, you can take the craft apart and carry her around it piecemeal. If you once try to build a catamaran, and succeed,—as you certainly will, if you have patience,—you will have the safest and most comfortable sail-boat in the world.



A fine lake for a catamaran.



On the St. John's River, Florida.

FLAT-BOATING FOR BOYS.

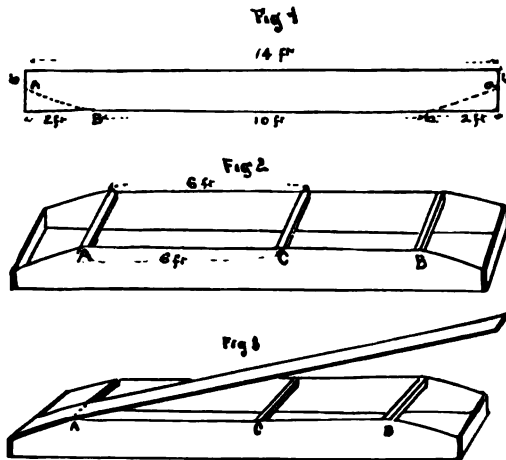
BY DANIEL C. BEARD.

FLAT-BOATS are essentially inland craft, having their origin with the birth of trade in the West before the puffing and panting steam-boats plowed their way through the turbid waters of Western rivers. They are craft that can be used on any stream large enough to float a yawl, but the St. John's River, Florida, is, perhaps, the most tempting stream for the amateur flat-boatman. The numerous inlets and lakes connected with the river, the luxuriant semi-tropical foliage on the banks, the strange-looking fish, and great, stupid alligators, the beautiful white herons, and hundreds of water-fowl of many descriptions,—all form features that add interest to its navigation, and inducements to hunters, fishermen, naturalists, and pleasure-seekers scarcely equaled by any other accessible river of the United States.

To build the hull of the flat-boat, use good pine lumber. For the sides, select two good straight two-inch planks, fourteen feet long and about sixteen inches wide. Take one of the planks (Fig. 1), measure six inches from the top upon each end, and mark the points (A a, Fig. 1); then upon the bottom measure from each end toward the center two feet, and mark the points (B b, Fig. 1). With your carpenter's lead-pencil, connect the points A B and a b, by a slight but regular curve; saw off the corners along the line thus made. Make the other side of your hull an exact duplicate of this.

Then take two two-inch planks, six inches wide and six feet long, for the stem and stern; set the side-pieces on edge, upside down, and nail on the two end-pieces (Fig. 2). Then, allowing four inches as the thickness of the two sides, there

will be a space inside the boat of five feet eight inches. Take three pieces of scantling, about three inches square and five feet eight inches long; place one near each end, flush with the bottom of the boat, just where the sheer of bow and stern begins. (See Fig. 2, A and B.) After fitting them carefully, nail * them firmly. Take the other piece of scantling and nail it in place at the point C (Fig. 2), so that it will measure six feet from the outside of the brace at A to the outside of the brace at C.



Diagrams of the hull.

the first cross-piece A, and nail it firmly; nail it again at C, and at the bow. Follow the same plan with the next board, being careful to keep it close up against the first board, so as to leave no crack when the bottom is finished. Calk up an accidental crack with oakum; give the whole a coating of coal-tar, and let it dry.

The remainder of the work is comparatively easy. After the coal-tar has dried, turn the boat over, and erect four posts, one at each end of the cross-piece A, and one at each end of the cross piece C (Figs. 2 and 3). The tops of the posts should be about five feet above the bottom of the hull. Put a cross-piece on top of the post A, and another at C, and the framework of your cabin is done. Make the roof of thin plank,

bending it in an arch, so that the middle will rise about one foot higher than the sides. The eaves should overhang about six inches beyond the cabin, upon each side. Board up the sides with material like that used for the roof, leaving

* Screws are even better than nails, as they hold better and do not crack the wood.—*Editor.*

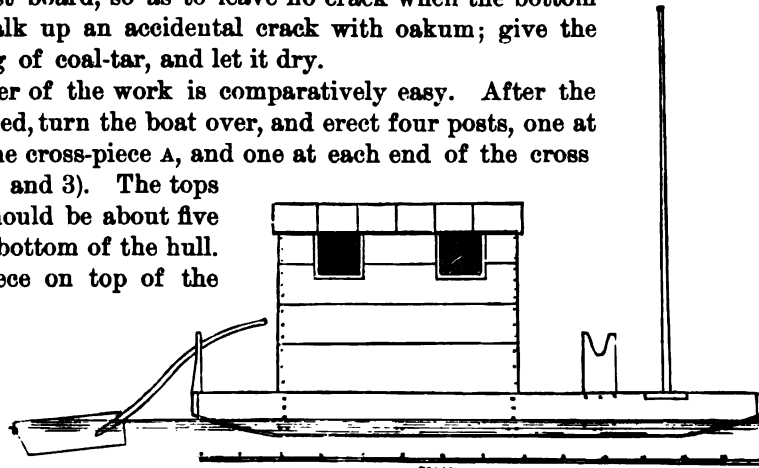


Fig. 4.—Side view of flat-boat, with cabin.

openings for windows and doors. Pieces of leather make very good hinges for the door, if there is no hardware store handy where iron hinges can be procured. The cabin can then be floored, a bunk or two may be built, and as many other conveniences as your taste or necessities indicate may be provided,—a book-shelf, a few clothes-hooks, etc.

Put in oar-locks, each made of a board with a deep notch cut in it; there should be three oar-locks—one for the steering oar and two in front for rowing (Fig. 4). Set a seat in front of the oar-locks, with a hole for a jack-staff to pass through. The jack-staff must be made so that it can be taken out or put in at pleasure, by having a simple socket underneath the seat, for the foot of the staff to fit in. When this is done, your boat is ready for use. Fig. 4 shows a side view of a fourteen-foot flat-boat, with a cabin five feet high at the sides and six feet at the middle. Fig. 5 shows a front view of the same. Fig. 6 shows a top view of the flat-boat as it would appear looking down upon the roof of the cabin.

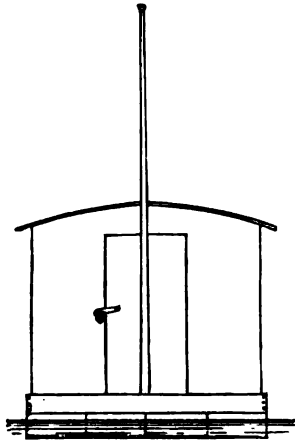


Fig. 5.—Front end view of flat-boat, with cabin.

The large diagram (Fig. 7), drawn in perspective, shows the interior of a plain cabin, with a floor six feet square, walls five feet high, and six feet between the floor and the ridge-pole, at the middle of the roof. The walls need not be more than four feet high, giving five feet between floor and ridge-pole.

A cabin six feet high may be fitted up with four folding berths. These are boards two feet wide, fastened to the wall by strong iron or leather hinges, so that they can be let down. The top flap is supported by straps, and the bottom one by folding legs. The diagram shows two berths down upon the left-hand side, and two folded up at the right-hand side. The lockers set under the bottom berths can be used for stowing away bed-clothing.

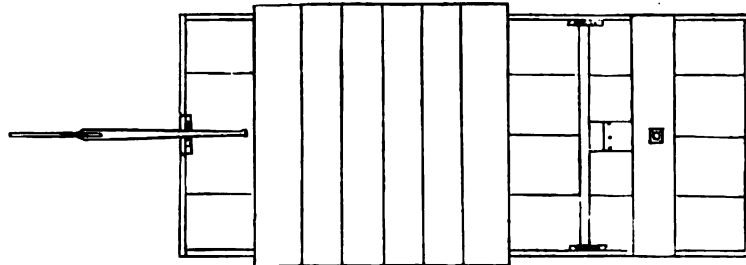


Fig. 6.—Top view of flat-boat, with cabin.

I shall not describe the construction of the interior of the cabin, my aim being only to suggest how it may be done, as every boy who is smart enough to build a flat-boat will have his own peculiar ideas about the manner in which it should



Flat-boating in Florida.

be fitted up inside. The interior construction depends, in a measure, upon the number of persons who are to occupy the cabin, and whether it is to be used by a party of young naturalists upon a collecting tour, or for fishing and shooting excursions, or simply as a sort of picnic boat for a few days' enjoyment, such as most boys in the country are quite well able to plan and carry out unaided.

The picture entitled "Who knocks?" on page 227, shows the interior of the cabin of a boat in which the only occupant is the dog left to guard the premises while the flat-boatmen are ashore.

Although this rude home-made flat-boat does not possess speed, yet, with a square sail rigged on the jack-staff, and with a good wind over the stern, it can get through the water pretty well; and as this sort of craft draws only a few inches of water, it can float in creeks and inlets where a well-loaded row-boat would drag bottom.

The time and expense given to the building of a flat-boat, under favorable conditions, amount to little; but should you, upon calculation, find the expense too great, or your time limited, you can, with little work and no expense, build a substitute, which we will christen the "Crusoe raft."

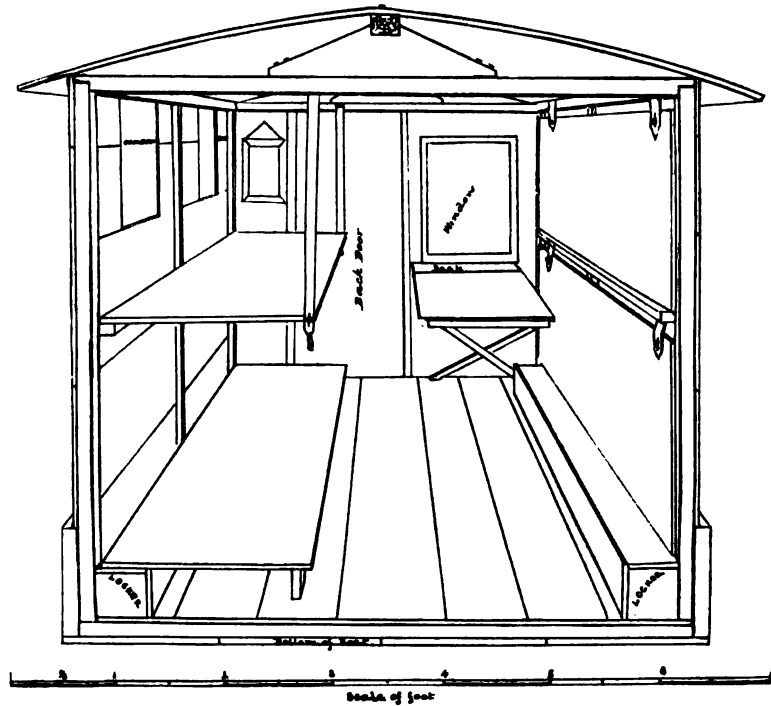


Fig. 7. Interior of cabin.

All that is necessary for the construction of this craft is an ax, an auger, and a hatchet, with some good stout boys to wield them.

For a large raft, collect six or seven logs, not more than ten inches in diameter; they must be tolerably straight and of nearly the same size. Pick out the longest and biggest for the center; sharpen one end; roll the log into the water, and there secure it. Pick out two logs as nearly alike as possible, to lie one at each side of the center-log. Measure the center-log, and make the point of each side-log, not at its own center, but at that side of it which will lie against the middle-log, so that this side point shall reach to where the pointing of the middle-log begins (Fig. 8).

After all the logs needed have been trimmed and made ready to be fitted, roll them into the water and arrange them in order. Fasten them together by cross-strips, boring holes through the strips to correspond with holes bored into the logs lying beneath. Through these holes drive strong and close-fitting wooden pegs. The water will cause the pegs to swell, and they will hold much more firmly than iron nails.

The skeleton of the cabin is made of saplings; such as are used for hoop-poles are the best. These are bent in an arch, and the ends are thrust into holes bored

for the purpose (Fig. 9). Over this hooping a piece of canvas is stretched, after the manner of the tops of old-fashioned country wagons.

Erect a jack-staff, to be used for a square sail or a flag, and with the addition of some sticks, whittled off at the ends, for oar-locks, your "Crusoe raft" is complete (Fig. 10).

For oars, use sweeps—long poles, each with a piece of board for a blade, fastened to one end. A hole must be bored through the pole, about three feet from the handle, to slip over the peg used as oar-lock; this peg should be high enough to allow you to stand while using the sweeps.

A flat stone placed at the bow will serve for a fire-place. If, now, the cabin is floored with cross-sticks, and all the cracks are stopped up to prevent the water splashing through, and if a lot of hay is piled in, you will have a most comfortable bed at night.

The "Crusoe raft" has one great advantage over all boats. You can take a long trip down a river on it, allowing the current to bear you along; then, after your trip is finished, you can abandon the raft and return by steam-boat or cars.

I remember visiting a lake at the head-water of the Miami. High and precipitous cliffs surrounded the little body of water. So steep were the great, weather-



"Who knocks?"

beaten rocks that it was only where the stream came tumbling down, past an old mill, that an accessible path could be found. Down that path I climbed, accompanied by my cousin; for, we knew that bass lurked in the deep, black holes among the rocks. We had no jointed rods nor fancy tackle; but the fish

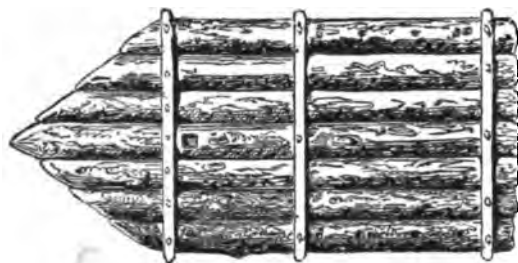


Fig. 8.—Float of "Crusoe raft."

there were not particular, and seldom hesitated to bite at a bait suspended by a coarse line from a freshly cut hickory sapling.

Even now, I feel the thrill of excitement and expectancy as, in imagination, my pole is bent nearly double by the frantic struggles of those "gamy" black bass. After spending the morning fishing, we built a fire upon a short

stretch of sandy beach, cleaned our fish by washing them in the spring close at hand, and then placed them among the embers to cook.

While the fire was getting our dinner ready for us, we threw off our clothes and plunged into the cool waters of the lake. Inexpert swimmers as we were at that time, the opposite shore, though apparently only a stone's-throw distant, was too far off for us to reach by swimming. Many a longing and curious glance we cast toward it, however, and strong was the temptation that beset us to brave the depths that intervened. A pair of brown ears appeared above the ferns near the water's edge, and a fox peeped at us; squirrels ran about the fallen trunks of trees or scampered up the rocks, as saucily as though they understood that we could not swim well enough to reach their side of the lake; and high up the face of the cliff was a dark spot, which we almost knew was the entrance to some mysterious cavern.

How we longed for a boat! But not even a raft nor a dug-out could be seen anywhere upon the glassy surface of the water, or along its reedy border. We nevertheless determined to explore the lake next day, even if we should have to paddle astride of a log.

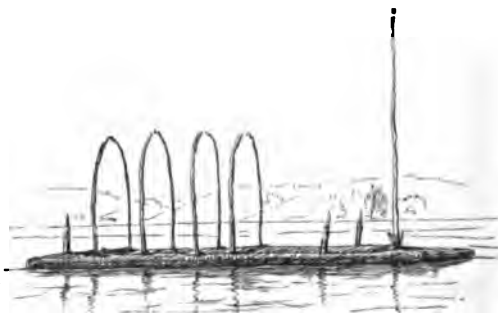


Fig. 9.—"Crusoe raft," with skeleton cabin.

The first rays of the morning sun had not reached the dark waters before my companion and I were hard at work, with ax and hatchet, chopping in two a long log we had discovered near the mill. We had at first intended to build a raft; but gradually we evolved a sort of catamaran. The two pieces of log we

sharpened at the ends for the bow; then we rolled the logs down upon the beach, and, while I went into the thicket to chop down some saplings, my companion borrowed an auger. We next placed the logs about three feet apart, and, marking the points where we intended to put the cross-pieces, we cut notches there; then we placed the saplings across, fitting them into these notches. To hold them securely, we bored holes down through the sapling cross-pieces into the logs; then, with the hatchet we hammered wooden pegs into these holes. For the seat, we used the half of a section of log, the flat side fitting into places cut for that purpose. All that remained to be done now was to make a seat in the stern and a pair of oar-locks. At a proper distance from the oarsman's seat we bored two holes, for a couple of forked sticks, which answered admirably for oar-locks; across the stern we fastened another piece of log, similar to that used for the oarsman's seat. With the help of a man from the mill, our craft was launched; and then, with a pair of oars made of old pine board, we rowed away, leaving the miller waving his hat.

Our catamaran was not so light as a row-boat, but it floated, and we could propel it with the oars, and, best of all, it was our own invention and made with our own hands. We called it a "Man Friday," and by means of it we explored every nook in the length

and breadth of the lake; and, ever afterward, when we wanted a boat, we knew a simple and inexpensive way of making one,—and a safe one, too.

The picture on page 225 shows how, some years ago, a certain flat-boating party enjoyed a "tie-up" one day, on the St. John's River, Florida. The boat was named *The Ark*, and among its comforts were a tiny cook-stove and four glass windows.

In those days, no band of "flatters" was regarded as of much account that failed to slay an alligator in the first day or two, and it was in deference to this public opinion that *The Ark* bore at each side of its cabin one of these reptiles as a trophy.

During the cruise, the members of the party had frequent occasion to put into practice all manner of devices for saving labor, and making the hunter as far as practicable independent of a mate when, as often happened, two men could not be spared to go foraging together. One of these "wrinkles," as they were termed, was a floating fish-car, which, being attached to the fisher's waist, floated behind him, as he waded, netting. This arrangement not only saved much weariness in carrying funny spoils to camp after a long and perhaps try-

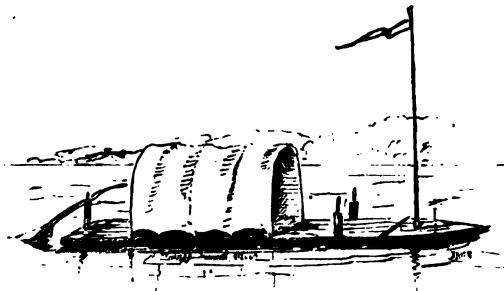


Fig. 10.—"Crusoe raft," complete.

ing day, but it helped to keep the fish fresh ; and when not in active use, it was towed behind The Ark.

Many hints of this same kind might be given, but this one will suffice to show that a boy with his wits about him can lighten very materially the fatigues inseparable from camping-out and flat-boating. Endurance of hardship is noble in itself, and there is call enough for it in this rough-and-tumble world ; but the fellow who most enjoys "roughing it" in a trip outdoors is he who is quick to save himself unnecessary exertion by using the simple means at hand.



The "Man Friday" catamaran.

CAMPS AND CAMPERS.

*"Come forth into the light of things,
Let nature be your teacher."*

WORDSWORTH.



"The wonderful cottage of boughs."

HOW TO CAMP OUT.

BY DANIEL C. BEARD.

TO me, no longer a young boy, the next best thing to really living in the woods is talking over such an experience. A thousand little incidents, scarcely thought of at the time, crowd upon my mind, and bring back with them the feeling of freedom and adventure, so dear to the heart of every boy. Shall I ever enjoy any flavor earth can afford as we enjoyed our coffee's aroma? The flapjacks, how good and appetizing! the fish, how delicate and sweet! And the wonderful cottage of boughs, thatched with the tassels of the pine,— was there ever a cottage out of a fairy tale that could compare with it?

I have tried to make a picture from memory, and the result lies before you. It is late in the afternoon; there stands the little cot, flooded with the light of

the setting sun ; those who built it and use it for a habitation are off exploring, hunting, fishing and foraging for their evening meal, and the small, shy creatures of the wood take the opportunity to satisfy the curiosity with which

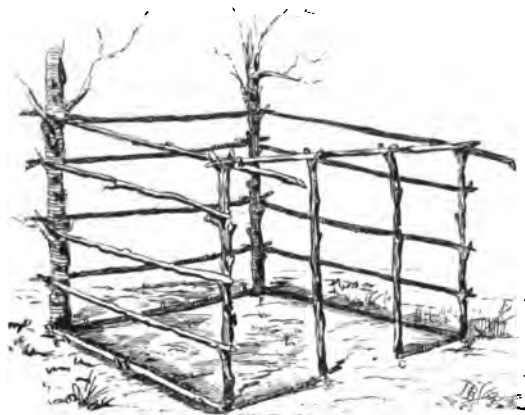


Fig. 1.—Frame-work of cottage.

they have, from a safe distance, viewed the erection of so large and singular a nest.

The boys will soon return, each with his contribution to the larder,—a fish, a squirrel, a bird, or a rabbit, which will be cooked and eaten with better appetite and enjoyment than the most elaborate viands that home could afford. And, although such joys are denied to me now, I can, at least, in remembering them, give others an opportunity to possess similar pleasures. It shall be my object to describe how these

houses may be built and these dinners cooked, and that, too, where there are neither planks, nor nails, nor stoves. To boys well informed in woodcraft, I should need to give only a few hints ; but, for the benefit of amateurs, it will be wise to go more into detail.

Four persons make a good camping party. Before arriving at their destination, these persons should choose one of their number as captain.

The captain gives directions and superintends the pitching of the tent or the building of the rustic cottage. The site for the camp should be upon a knoll, mound, or rising ground, so as to afford a good drainage. If the forest abounds in pine trees, the young cottage-builder's task is an easy one. It often happens that two or three trees already standing can be made to serve for the corners of the proposed edifice, though trees are not absolutely necessary.

Fig. 1 represents part of the frame-work of one of the simplest forms of rustic cottage. In this case, two trees serve for the corners of the rear wall. The upright posts are young trees that have been cut down and firmly planted at about four or five paces in front of the trees. As shown in the diagram, enough of the branches have been left adhering to the trunks of the upright posts to serve as rests for the cross-bars. To prevent complication in the diagram, the roof is not shown. To make this, fasten on an additional cross-bar or two to the rear wall, then put a pole at each side, slanting down from the rear to the front, and cover these poles with cross-sticks. When the frame-work is finished, the security and durability of the structure will be improved by fastening all the loose joints, tying them together with withes of willow,

grass, or reeds. The next step is to cover the frame. This is done after the method shown in Figure 2. From among some boughs, saved for this purpose, take one and hang it upon the third cross-bar, counting from the ground up; bring the bough down, passing it inside the second bar, and resting the end on the ground outside the first bar; repeat this with other boughs until the row is finished. Then begin at the fourth bar, passing the boughs down inside the third and outside the second bar, so that they will overlap the first row. Continue in this manner until the four walls are closed in, leaving spaces open where windows or doors are wanted. The roof is thatched after the same method, beginning at the front and working upward and backward to the rear wall, each row overlapping the preceding row of thatch. The more closely and compactly you thatch the roof and walls, the better protection will they afford from any passing shower. This completed, your house is finished, and you will be astonished to see what a lovely little green cot you have built.

The illustration at the head of this article differs from the one we have just described only in having the roof extended so as to form a sort of veranda, or porch, in front; the floor of the porch being covered with a layer of pine-needles. Should you find your house too small to accommodate your party, you can, by erecting a duplicate cottage four or five paces at one side, and roofing over the intervening space, have a house of two rooms with an open hall-way between.

Before going to housekeeping, some furniture will be necessary; and for this we propose to do our shopping right in the neighborhood of our cottage. Here is our cabinet and upholstery shop, in the wholesome fragrance of the pines.

After the labor of building, your thoughts will naturally turn to a place for sleeping. Cut four forked sticks, sharpen the ends, and drive them firmly into the ground at the spot where you wish the bed to stand in your room. Two strong poles, long enough to reach lengthwise from fork to fork, will serve for side-boards, a number of short sticks will answer for slats; after these are fastened in place, you have the rustic bedstead shown in Fig. 3. A good spring-mattress is very desirable, and not difficult to obtain. Gather a lot of small green branches, or brush, and cover your bedstead with a layer of it about one foot thick; this you will find a capital substitute for springs. For your mattress proper, go to your upholstery shop under the pine-tree, and gather several armfuls of the dry pine-needles; cover the elastic brush "springs" with a thick layer of these needles; over this spread your india-

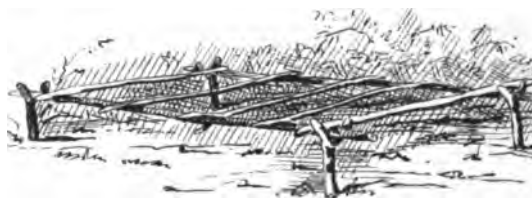


Fig. 3.—Rustic bedstead.

rubber blanket, as shown in Fig. 5, with the rubber side under, so that any moisture or dampness there may be in your mattress may be prevented from coming through. You may now make up your bed with whatever wraps or blankets you have with you, and you have (Fig. 6) as complete and comfortable a bed as any forester need wish for.

I would suggest to any boy who means to try this rustic cabinet-making, to select carefully for the bed-posts sticks strong enough to support the weight he intends them to bear, otherwise his slumbers may be interrupted in an abrupt and disagreeable manner. My first experiment in this line proved disastrous. I spent the greater part of one day in building and neatly finishing a bed like the one described. After it was made up, with an army blanket for a coverlet, it looked so soft, comfortable and inviting, that I could scarcely wait for bed-time to test it.



Fig. 5.—Mattress covered with rubber sheet.

When the evening meal was over, and the last story told around the blazing camp-fire, I took off hat, coat and boots, and snuggled down in my new and original couch, curiously watched by my companions, who lay, rolled in their blankets, upon the hard ground. It does not take a boy long to fall asleep, particularly after a hard day's work in the open air, but it takes longer, after being aroused from a sound nap, for him to get his wits together,—especially when suddenly dumped upon the ground with a crash, amid a heap of broken sticks and dry brush, as I happened to be on that eventful night. Loud and long were the shouts of laughter of my companions when they discovered my misfortune. Theoretically, the bed was well planned, but practically it was a failure, because it had rotten sticks for bed-posts.

Having provided bed and shelter, it is high time to look after the inner boy; and while the foragers are off in search of provisions, it will be the cook's duty to provide some method of cooking the food that will be brought in.

One of the simplest and most practical forms of bake-oven can be made of clay and an old barrel. Remove one head of the barrel, scoop out a space in the



Fig. 4.—The spring-mattress.



Fig. 6.—The bed complete.

nearest bank, and fit the barrel in (Fig. 7). If the mud or clay is not damp enough, moisten it, and plaster it over the barrel to the depth of a foot or more, leaving a place for a chimney at the rear, where a part of a stave has been cut away; around this place build a chimney (Fig. 8). After this, make a

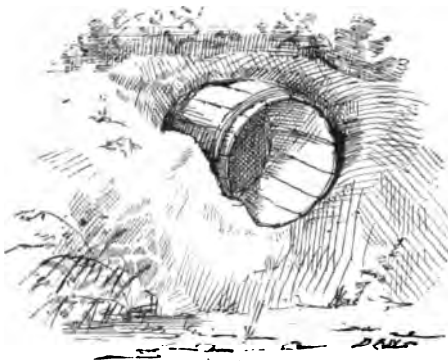


Fig. 7.—The oven begun.



Fig. 8.—The oven in a bank.

good, rousing fire in adding fuel until burned out and the baked hard. This will bake as well as, any new patented home. To use it, and let it burn un-
oughly heated, then coal and embers, put close up the front

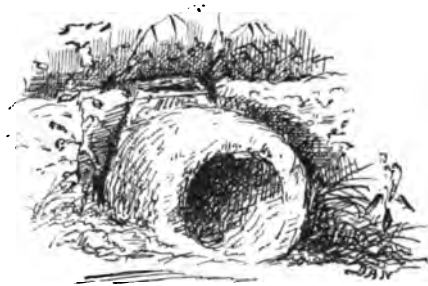


Fig. 9.—The oven in an artificial embankment.

the barrel, and keep all the staves are surrounding clay is makes an oven that if not better than, stove or range at build a fire inside til the oven is thor-
rake out all the your dinner in and of this home-made

oven with the head of the barrel, which you should preserve for this purpose.

If there be no bank convenient, or if you have no barrel with which to build this style of oven, there are other methods that will answer for all the cooking necessary to a party of boys camping out. Many rare fish have I eaten in my time. The delicious pompano at New Orleans, the brook-trout and grayling, fresh from the cold water of northern Michigan, but never have I had fish taste better than did a certain large cat-fish that we boys once caught on a set-line in Kentucky. We built a fire-place of flat stones,—a picture of which you have in Fig. 10; this we covered with a thin piece of slate, cleaned the fish, and placed it, with its skin still on, upon the slate (Fig. 11). When well baked upon one side, we turned it over, until it was thoroughly cooked. With green sticks we lifted off the fish and placed it upon a piece of birch-bark; the skin adhered to the stone,

and the meat came off in smoking, snowy pieces, which we ate with the aid of our pocket-knives and rustic forks made of small green twigs with the forked ends sharpened.

If stones cannot be had to answer for this stove, there still remains the old, primitive camp-fire and pot-hook, shown in Fig. 12. The very sight of this iron pot swinging over a blazing fire suggests soup, to eat which, with any comfort, spoons are necessary. These are quickly and easily made by thrusting clam

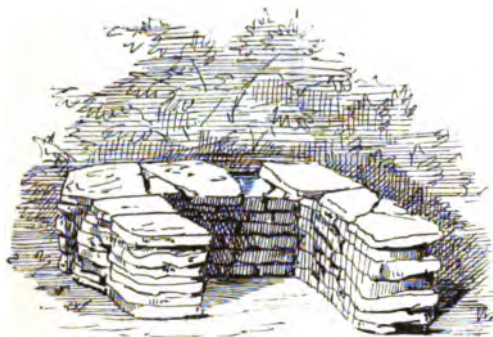


Fig. 10.—Fire-place of flat stones.

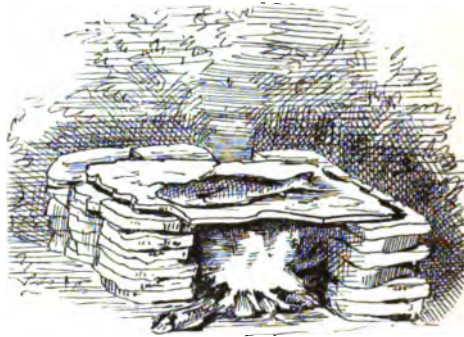


Fig. 11.—Ready to cook.

or mussel shells into splits made in the ends of sticks. In Fig. 13, A shows a shell and stick; in Fig. 13, B represents a spoon made firm by binding the shell in its place. A splendid butter-knife can be made in a similar manner, and with a little care, from the shell of a razor-clam (Figs. 14 and 15).



Fig. 12.—Boiling the soup.

If you stay any time in your forest home, you can, by a little ingenuity, add many comforts and conveniences. I have drawn some diagrams, as hints in this direction. For instance, Fig. 17 shows the manner of making an excellent rustic chair. A and B are two stout poles; E and F are two cross-poles, to which are fastened the ends of a piece of canvas, carpet or leather (Fig. 18), which, swinging loose, fits itself exactly to your form, making a most comfortable easy-chair in

which to rest or take a nap after a hard day's tramp. It often happens that the peculiar formation of some stump or branch suggests new styles of seats. A table can be very readily made by driving four forked sticks into the ground

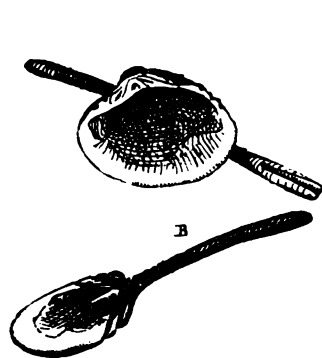


Fig. 13.—Spoons.



Fig. 15.—A rustic knife.



Fig. 14.—Knife-blade and handle.

for legs, and covering the cross-sticks upon the top with pieces of birch or other smooth bark; Fig. 16 shows a table made in this manner, with one piece of bark removed, to reveal its construction.

As a general rule, what is taught in boys' books, though correct in theory, when tried proves impracticable. This brings to mind an incident that happened to a party of young hunters camping out in Ohio. Early one morning, one of the boys procured from a distant farm-house a dozen pretty little white bantam eggs. Having no game, and only one small fish in the way of fresh meat, the party congratulated themselves upon the elegant breakfast they would make of fresh eggs, toasted crackers and coffee. How to cook the eggs was the question. One of the party proposed his plan.

"I have just read a book," said he, "which tells how some travelers cooked



Fig. 17.—Frame of chair.



Fig. 18.—Camp-chair.

fowl and fish by rolling them up in clay, and tossing them into the fire. Shall we try that plan with the eggs?"

The rest of the party assented, and soon all were busy rolling rather large balls of blue clay, in the center of each of which was an egg. A dozen were placed in the midst of the hottest embers, and the boys seated themselves around the fire, impatiently awaiting for the eggs to cook. They did cook,—with a

vengeance! Zip, bang! went one, then another and another, until, in less time than it takes to tell it, not an egg remained unexploded; and the hot embers and bits of clay that stuck to the boys' hair and clothes were all that was left to remind them of those nice, fresh bantam eggs. It was all very funny, but ever after, the boys of that party showed the greatest caution in trying new schemes, no matter how well they might seem to be indorsed.

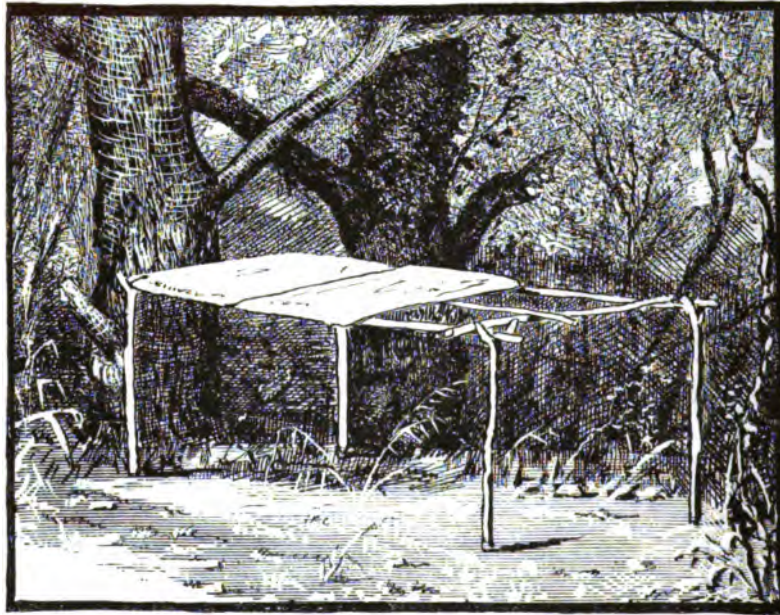
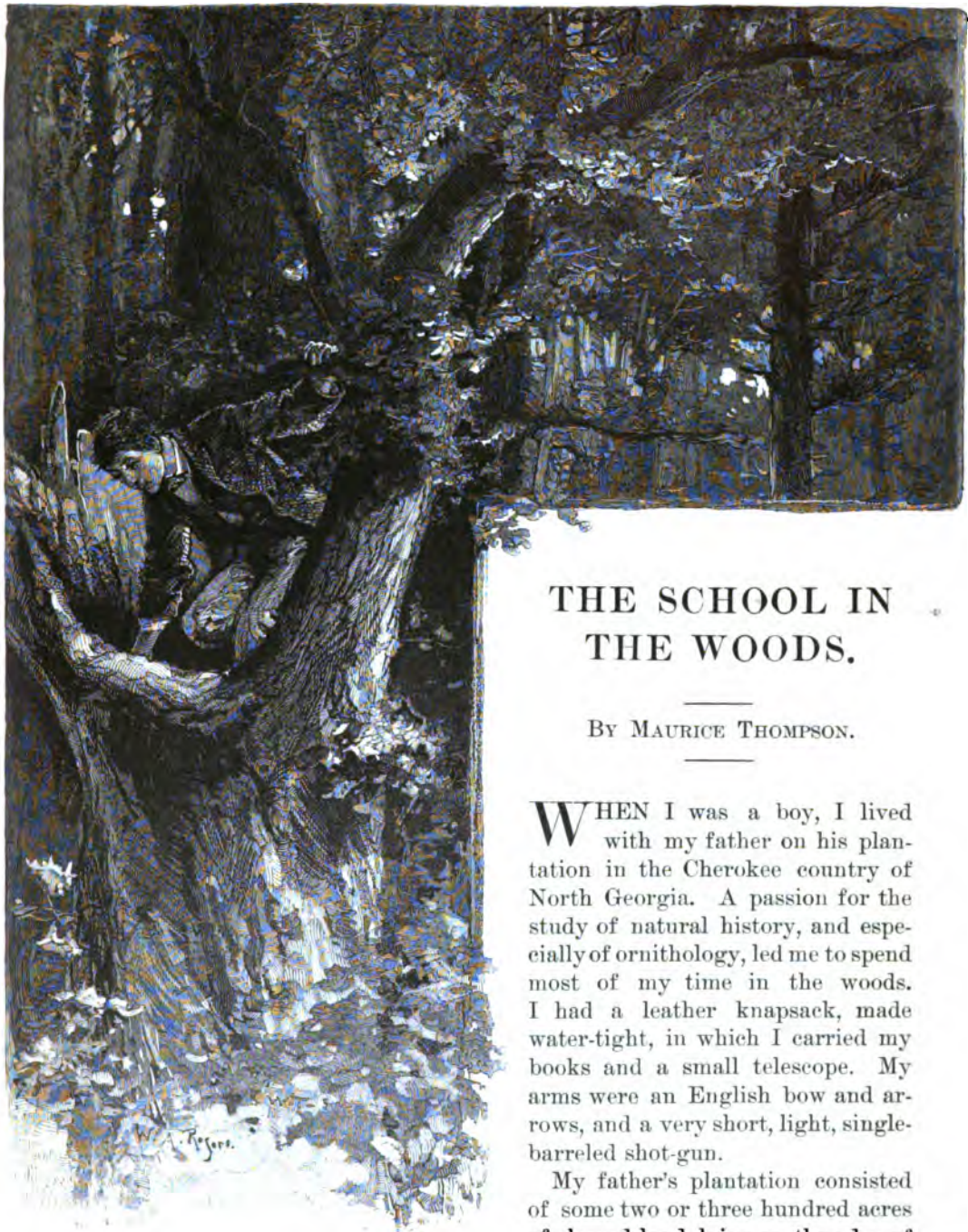


Fig. 16.—A camper's table.



THE SCHOOL IN THE WOODS.

BY MAURICE THOMPSON.

WHEN I was a boy, I lived with my father on his plantation in the Cherokee country of North Georgia. A passion for the study of natural history, and especially of ornithology, led me to spend most of my time in the woods. I had a leather knapsack, made water-tight, in which I carried my books and a small telescope. My arms were an English bow and arrows, and a very short, light, single-barreled shot-gun.

My father's plantation consisted of some two or three hundred acres of cleared land, lying on the edge of

an immense forest of pine and oak, through which flowed a beautiful river, named by the Cherokee Indians "Coosawattee." Some clear spring streams, too, rising in the foot-hills, or rather the spur-ridges of the Pine-log mountains, rippled along the many little dells among ferns, wild morning-glories, and balsam.

This region was a paradise of birds and many kinds of small quadrupeds. A few deer were to be seen, if you understood how to look for them, and occasionally a flock of wild turkeys would rise from the edge of some sedgy glade with a loud flapping of wings, and fly away into the darkest hollows of the woods.

Let me tell you how I prosecuted my various studies. I wished to study all the branches of a liberal education whilst paying especial attention to zoölogy and general natural history, and I so arranged my studies that by spending more than the usual time with my teachers Mondays, Tuesdays, and Wednesdays, I had Thursdays, Fridays, and Saturdays free for my woodland ramblings and outdoor studies. It was a very joyful school-life. Whilst lying beside clear mountain-springs, in the cool shade of the wild woods, with many rare songsters warbling above me, I read Wilson and Bonaparte and Audubon's books on birds. At other times I would sit on the cedar-covered bluffs of the Coosawattee, and pore over mathematical problems. I read some choice novels, principally French, in order to get a good knowledge of that language. I remember well how "The Romance of a Poor Young Man" delighted me. I translated and read, during one bass-fishing season, the "Essay on Old Age," and the "*Somnium Scipionis*" of Cicero, and many of the odes of Horace.

My father had a friend living in England who, learning that I was a great bird-hunter, wrote to ask if I could kill and skin for him two perfect specimens of the great black woodpecker, a bird then very hard to find, and now almost



"Lying in the cool shade I read and studied."



"We built a rude shelter." (See page 244.)

extinct in a large part of what was once its locality. He offered to pay me ten pounds, sterling money, for the skins. Of course, I was delighted with the chance of earning so large a sum in a way which appeared so easy.

It was in February when I received the letter. I remember that a light snow, a rare thing in that latitude so late in the winter, lay on everything, sticking so fast to the leaves of the small pine saplings that the lower limbs drooped down to the ground. I went forth at once with my shot-gun, thinking that in a few hours I could earn the ten pounds. But I did not at first properly consider what the Englishman had meant by *perfect* specimens, nor did I foresee that it would take a whole week's hunt to get a shot at the kind of bird I wanted; and even then to miss it!

The great American woodpecker is a beautiful bird. He is rather larger than a tame pigeon, almost jet black over the most of his body and wings, though the latter, when spread out, disclose some white feathers and spots, and his breast and sides are mottled with shades of different dark colors. On each side of his head is a line of white. On his crown is a long tuft of brilliant scarlet feathers. His beak, or bill, is very long, strong, and sharp. His legs are short, of a dark, dingy hue. Nearly always, when flying, he goes up and down, as if riding on long waves of wind, and he utters a loud cackle which echoes cheerily through the woods.

I remember where I killed my finest specimen of this kind of woodpecker. It was on the side of John's Mountain, about twenty miles from father's plantation. I was climbing up a very steep place among some small "black-jack" trees, when the bird flew right over my head, and launched himself for a strong sweep across the valley. I threw up my gun and fired with a hurried aim. Luckily I hit him; but, oh, where did he fall to! It took me nearly a half hour of hard, dangerous clambering down the cliffs to get to him.

I sent the Englishman thirteen birds—their skins, I mean—before he got two he would be satisfied with. Then I wrote to him not to send me the money, but to get me the best double-barreled shot-gun the ten pounds would buy in London. This he did, and I afterward carried the gun through many a big hunt in Florida.

What made my school-life in the woods most delightful was the companionship of my brother, a little younger than I, who studied with me. He was a most enthusiastic egg-hunter. He collected for the cabinets of two or three gentlemen a great number of rare bird-eggs. We both delighted in shooting with the bow and arrow. Sometimes we spent a day in the woods as follows: We would go to some one of the many cold springs of clear water in among the hills, and select an open spot, where we would set up a small mark to shoot at. Our rule was to shoot for half an hour, then unstring our bows and drink a cup of water, in which we had dissolved some blackberry, mulberry, or currant jelly; then take our books and study hard for an hour, after which take another half-hour's shooting, followed by lunch. Under such circumstances study was easy and our sport was glorious.

Those little mountain streams of North Georgia abound in bass, a very gamy fish. We used to angle a great deal for it at the proper season. Sometimes we would neglect our lessons a little when the fish were particularly lively; but we made up for this on rainy days when we could do nothing but study.

Late in the bass-fishing season the muscadines ripen along the streams. They are very large wild grapes, growing, not in clusters, but singly, as do plums. I know of nothing more delicious than a muscadine. We used to take a little flat-bottomed boat, and pole it along the banks of those rivers where the muscadine-vines covered the overhanging trees, and, getting hold of a bough, we would shake down the dark purple fruit until the floor was covered. Then we would eat and study at the same time, while the waves of the river kept our boat gently swaying up and down. We sometimes professed to think that muscadine juice softened the conditions of an algebraic problem, and even brightened the angles of French verbs. When we were reading Fénelon's "Adventures of Telemachus," we haunted a little island in the Oothcaloga, which we named "L'île de Calypso," and upon it we built ourselves a rude shelter under a giant plane-tree. From the stream at the south end of this island we caught some very large bass, and some blue perch, called bream by the Southern people.

Immediately after the first heavy frosts of autumn, we went to the mountains to gather chestnuts. The trees were generally very large, and often they bore enormously large quantities of those huge prickly burrs in which the nuts grow. After the frost, the first wind would cover the ground at the roots of the trees with the burrs already opened and the nuts peeping out. Nowhere in the world could be found finer chestnut forests than those of North Georgia a few years ago; but now they are sadly dilapidated, worms having killed many of the trees. On our nutting excursions we went in a mountain cart drawn by mules, and camped out for a week or so. We studied at night, by the light of flaming splinters of resinous pine, called by the Southern people "lightwood." Our teachers sometimes would go with us on these pleasant rambles, giving us our lectures in the open air. This camping out is a very enjoyable thing in every way, when the weather is fine. Wilson's beautiful descriptive prose discloses its very subtlest charm when read aloud to the accompaniment of a crackling outdoor fire, amid the stillness of the woods by night. Meat is juicier and bread sweeter when eaten in the open air, and mental food takes on the same increase of flavor and novelty of taste when blown over by the winds, shone upon by the sun and moon, and dampened by the dews of nature.

When men ask me where I was educated, I answer: "In the University of the Woods," and they sometimes add the further question:

"Is that a German school?"

Then I look grave, and shake my head, saying:

"No, it is situated in the Georgian mountains."

Which, of course, sounds very much as if my education were Asiatic!





HOW TO CAMP OUT AT THE BEACH.

BY FRANK E. CLARK.

WHERE shall we spend our next summer vacation, boys? Perhaps just at the time you are reading this, you may not consider the problem very pressing to one, but you will think it so by the time the hot, bright days begin to make the school hours tedious.

So we propose to take time by the forelock and tell you now of a real jolly way of spending a part of those vacation weeks.

Some of you will go to Saratoga, or Long Branch, or the White Mountains, with your parents, although such a way of spending a vacation requires a heavier pocket-book than many of us possess. Yet when the fall brings us home, and school begins again, we will warrant you that those who go with us will have such glowing reports of their grand, good times that you will all want to join our party another year.

One great advantage of our plan is that it costs so little that almost any of us can carry it out, and when you ask papa about it, and he looks over his spectacles and shakes his head, as much as to say, "I can't afford

it," you can tell him that it will not cost him much more than if you had staid at home.

Then if mamma looks troubled and fears you will catch cold, and Aunt Jane warns you not to get drowned, and sister Kate suggests that "there will be lots of bugs and snakes and ugly things creeping about," you can tell them that the man who told you the plan has been there himself and knows all about it, and that those lions in the way will all be found to be chained when you get to them.

Now, before we conjure up any more of the objections which the home friends will raise, it may be important to tell you that our plan is to take a tent and camp out for a few weeks upon the seashore in the most approved "Robinson Crusoe" style, with the exception that we shall have Tom and Dick and Harry for our companions instead of Friday and the goat.

In the first place, you must know that this is not to be an ordinary visit to the beach, such as any one with plenty of money can make, but we are going to leave our good clothes and our every-day life at home as far as it is possible, and take, besides our old clothes, a large stock of good-nature and a determination to be pleased with whatever we find.

And we expect to bring back sunburnt cheeks, robust health, and the remembrance of some charming vacation weeks.

But, before determining anything else, we must be careful about selecting our party. We are to rough it, you know,—to catch our own fish and cook them too, to sleep on the ground, and perhaps get wet and cold, without grumbling. So we want five or six good fellows in our party, but no babies, or dandies, or fault-finders.

The next thing to be thought of is the tent. This should be large enough to hold us all comfortably, as we lie stretched out at night, with a little spare room for our stores. An A tent is the best,—that is, one with a ridge-pole, supported at each end by uprights,—since this gives more available room than a circular tent with one pole in the center.

This we can hire of any sail-maker for about three dollars per week.

To keep us warm through the chilly nights, which we almost always find near the sea, we shall want a heavy army blanket and an old winter overcoat,—no matter how worn,—which we can put on, if necessary, when we go to bed.

Besides these, on account of the dampness, we should have two or three rubber blankets to spread on the ground.

What shall we eat, and what shall we drink? are the next questions of vital importance. The latter question is easily answered by pitching our tent within sight of some good spring or well, but the former demands more attention. In our party we do not intend to fare sumptuously every day; in fact, you will be surprised to know how few things in the edible line are necessary to our comfort. Here is a list, and perhaps even one or two of these might be omitted: Hard-tack, salt pork, ham, potatoes, corn meal, coffee, sugar, condensed milk, salt and pepper.

We have found that a barrel of hard-tack will last a party of six between three and four weeks, if they occasionally manage to get a small supply of softer bread.

Of salt pork, which we shall find indispensable in cooking the fish, we shall want at least ten pounds. The corn meal will be useful to roll the fish in before frying them, as well as in making corn dodgers, slapjacks, and Johnny-cakes.

Indeed, for any of those dishes which our genius for cooking can invent, corn meal is far better than flour, and twenty or even thirty pounds of it will be none too much for a three-weeks' trip. One good-sized ham, six pounds of coffee, twenty pounds of sugar, four cans of condensed milk, and a liberal supply of salt and pepper will complete our stores. It may be easier to get the potatoes near the camp than to take them from home.

The only things now left to be provided are the cooking utensils. A small sheet-iron stove is much more convenient than a fire-place of stones, and any good tinman will give us just what we want if we ask for a "camp stove." This, together with coffee-pot, spider, tin pail for boiling potatoes, tin plate, cup, knife, fork, and spoon for each member of the party, ought not to cost more than fifteen dollars.

These articles are all made especially for camping parties, so as to go inside of the stove, which has a handle at each end, and can thus be carried easily like a small trunk.

Now that our preparations have all been made, let us count the cost before setting out.

Here is the bill, founded on a careful estimate, in about the shape that our treasurer will present it when we come to leave the beach:

Tent for three weeks, at \$3.00 per week	\$9.00
Provisions taken with us	22.00
Stove and cooking utensils	15.00
Fresh provisions bought at the beach, such as eggs, meat, fresh bread, etc	15.00
Incidentals	20.00
Total	<u>\$81.00</u>

This sum divided among six, you see, makes each one's share of the expense \$13.50 for three weeks, or \$4.50 per week.

Of course this does not include the cost of traveling to the camp.

We have taken pains to be minute and accurate in these figures, since we know that their amount will decide the point, in many cases, whether a party can go to the beach or not.

When we have obtained from Aunt Jane her best receipts for fish chowder and fried fish, corn cakes, coffee, etc., we may consider ourselves ready to start at a moment's notice.



A homesick young camper.

There are precautions to be thought of before we make up our minds to start on such an expedition. In the first place, we must not persuade any boy of very weak constitution to go with us, because, although sea air and bathing would probably be of the greatest service to such a one, our rough mode of living might be an injury to him.

And then, before we go, we should determine to be careful to select a camp where the bathing is safe and where there is no strong under-tow. It will be easy enough to do this if we take a little trouble and make proper inquiries.

Now that we are all ready, we are confronted by the important question Where shall we go?

Very likely you know, or if not, your friends will tell you, of "just *the* place" for a tenting party. In fact, "just the places" are so numerous along our Atlantic coast, and you to whom we are writing are so widely scattered, that it would be difficult to name any one place that would be convenient for many of you. We would only suggest that you should not choose a fashionable watering-place, but some retired spot, where you will feel at ease and be undisturbed. Moreover, you should spread your canvas on a dry slope, if possible, where the water will not settle, and in a place where the sea breezes will have a fair chance at you too; for they will be a better preventive against mosquitoes and troublesome flies than all the pennyroyal and catnip in the world.

If you were to have an inland camp, the shade of trees would be indispensable, but at the beach the breeze, which almost always springs up before noon from seaward, will serve to keep you cool.

As to fish, there are generally plenty of them, of various kinds, to be found all along our coast, but, unless you have a row-boat always at command, you should choose a place with convenient rocks to catch them from. So, to put it in a word, the best place for our camp is a retired spot on a little slope, with bold rocks not far off, jutting out into the sea.

Now that these preliminaries have been settled, we will suppose that, with all our baggage, we have been transported to some such seaside paradise as we have described. First, up goes the tent. A little practice will make this only a ten-minutes' job. Then a committee of two should be detailed to dig a trench six or eight inches deep about the tent which will carry off the water and save us from a wet skin in rainy weather.

Two more will resolve themselves into a fire-wood brigade, to collect the fuel which Neptune has kindly cast up at our feet in the shape of drift-wood, and the rest will betake themselves to the rocks, with their lines and poles, to catch the supper, which we feel pretty confident is awaiting us just beneath those green waves.

For bait we shall use clams, or worms, or mussels,—whichever are most convenient. Sea-worms, or "sand-worms,"—ugly-looking crawlers they are, with

almost innumerable legs,— can often be found in great numbers under the stones when the tide is low, and they make excellent bait.

If none of the party understands such matters, almost any fisherman we may meet will teach us how to prepare our fish. Then we must boil the coffee and lay the fish in the sizzling frying-pan, stir up the Johnny-cake, fry the potatoes, and in half-an-hour we shall all be ready to sit down to a royal supper. At least this will be the verdict of our sharp appetites.

By the time supper is disposed of and the dishes are washed up, it will begin to grow dark.

So we will pile the largest piece of drift-wood on the fire, roll ourselves up in the blankets with our feet to the blaze, and see who can tell the best stories, until the sleep-fairies persuade us to listen to stories of their own in dreamland.

And here, snugly rolled up in your blankets, the last story told, the last conundrum given up, and pleasant dreams hovering around, we propose to leave you.

Our purpose in this article has been accomplished if we have told you *how* to go. Though we might go on for pages describing the pleasures of those three weeks of camp-life, we will not do so, but hope that, at some time, many of you will know by experience, far better than we can tell you, what rare fun there is in a vacation spent at "the tent on the beach."





THE BOYS' PARADISE.

(A Summer Visitor's Account of Camp Chocorua.)

BY ELIZABETH BAICH.

IN the Indian language the meaning of "Asquam" is "shining waters," and surely no name could better describe the beautiful lake of sparkling blue, which, nestling among the noble White Mountains, is dotted with numerous islands. Upon one of these islands is Camp Chocorua, so called from the mountain of that name,—the highest point to be seen in the chain of hills inclosing the lake.

Some five years ago it was decided to establish on this island a summer camp for boys, the term to begin in June and to end about the tenth of September. The first summer the camp opened with some half-dozen boys. Last season twenty-five manly little fellows tumbled in and out of the lake, like water-brownies, perfectly fearless, paddling canoes which had been made by themselves, swimming equally well in clothes or without, and growing active and healthy in the strong, pure mountain air.

Five men, composing "the faculty" in this summer camp, have charge of the boys, and "freedom without license" might almost be the camp motto, so careless, happy, and untrammelled are the lads, yet so perfect is the discipline. One of the first principles of the camp system is, that in every way the faculty shall live the same lives as the boys themselves, sharing their work as well as their pleasures; the spirit existing between the two is therefore far less that of master and pupil than that of good comrades, who are at the same time helpful friends.

Life at Camp Chocorua is a busy one. There are no "book lessons," to be sure; but a good many things are taught that are not always to be found in books. To begin with, bracing mountain air and active out-of-door life give a keen appetite, and it is no small undertaking to provide food for twenty or thirty hungry mouths. Then, too, the tin dishes and plates in which the food is cooked and eaten have to be cleaned and kept in order, and "dish-washing" therefore becomes a necessity. The kitchen-beach is a lively place at these times. In the carpenter's shop, there is work of various kinds to be done; there, too, canoes are built, but no boy is allowed to paddle or sail a canoe until he is an adept at swimming, and can be trusted to take care of himself in the water. This rule is one of the strictest in camp. The *Golden Rod* is the camp newspaper. It is edited and entirely conducted by the boys. In its columns appears a notice to the effect that the "Good-Will Contracting Company



Dish-washing.

washes clothes, irons clothes, cleans and tidies beaches, builds piers, stone walls, steps, etc., carries dirt, and publishes newspapers." This will show idleness has but a poor chance at Camp Chocorua. The boys are divided into four crews, which undertake in turn the different kinds of work: one day, the cooking; the next, dish-washing; the third, police duty—including the tidying of beaches, and all work assigned to no other crew. The fourth day is "off duty." This changes the kind of work done daily, and yet gives each boy a chance of learning all the tasks. One of the faculty works with each crew of boys.

The boys sleep in wooden buildings, which are roofed over, but thoroughly ventilated, and the lads seem cozy enough lying curled up in army blankets or on mattresses placed on the floor. They may, if they wish, take a dip in the lake before breakfast, and no one who has not tried it can realize the brightening, bracing, "wakening-up" effect of that morning dip! How it clears the brain and invigorates the body, making one feel equal to all things, strong and ready to do! The regular morning swim does not take place until later,—about eleven o'clock, after the camp work is complete. All through the week the boys may wear shoes and stockings, or they may go barefoot, just as they happen to fancy, and the camp costume consists of a gray flannel shirt and short trousers.

On Sundays, however, they all wear, in addition, scarlet stockings and scarlet caps, while their gray shirts are laced with scarlet cords. A bonny crew they look, as they push off in the "church boat" at three o'clock, to meet, at Cox's Beach, half a mile away, any visitors from the neighboring hotel or farm-houses who may wish to join in the Sunday services. These are conducted in a lovely spot called the "chapel," on the farther side of the island. Rustic seats are ranged around an open space, in the center of which, above a rock forming a natural altar, rises a large cross made of white birch. This altar is dressed with leaves and flowers by the boys, before the service begins; and after the little congregation is assembled, one hears in the distance clear young voices singing some processional hymn, and along a path through the woods, with the sunlight dancing in and out among the branches, the boys come nearer and nearer. Then they take their places at the place appointed for the choir, whilst Mr. Ernest Balch takes his on the other side of the flower-decked rock, and reads the service.

The offertory made at these services goes to the different charities contributed to by the camp, and more than one sick boy or girl in different hospitals have whiled away hours of loneliness and suffering by reading books or magazines sent by those happy, healthy boys at Camp Chocorua as a solace in their pain. Sunday afternoon is devoted to writing home letters, and in the evening, at prayers, Mr. Balch has a quiet talk with the boys in the chapel.

The summer sports take place in August, and consist of fancy swimming and diving, canoe and boat racing, base-ball and tennis. Last year the parents and friends of the boys, to the number of one hundred, accepted the invitation of the camp, and dined there at the conclusion of the sports, which lasted two days. A few weeks later some little plays were acted by the boys. These were very clever productions, and they were excellently performed. The price of admission was modestly placed at fifteen cents, but the visitors gave more than that, since the object of the entertainment was to add to money already collected which was to be devoted to endowing a bed in a children's free hospital, so soon as the required amount could be raised. A huge bonfire burning brightly on the shore, and dozens of red-capped boys darting about in its ruddy blaze,



Their first appearance upon any stage. A charity play in a primitive theater.

proved a picturesque contrast to the great white moon as it rose slowly above the mountains and threw a broad band of silvery light across the lake, while from boat to boat cheery "good-nights" rang over the water as the guests who had enjoyed the evening's festivities were rowed to shore.

These charities at Camp Chocorua mean, in the purest sense of the words, "helping others out of one's own store," for the money contributed by the boys is their own, fairly earned by them to do with as they please. Once in camp, an equal weekly allowance is given to every boy, no matter what may be the difference in their parents' means. This allowance is small, and if more money is desired, either for candy, or soda water, or as a contribution to the charities, or to buy materials for a new canoe, or to purchase a canoe already built,—for any extra luxury, in fact,—the boy with such desires is obliged to earn the money needed, and work which is paid for at the regular rate of wages for labor

will always be furnished him whereby he can earn it. Contracts can be taken for leveling paths, or building walls, or anything else which is needed at the camp, and the money earned by such work is deposited by the boy earning it in the Chocorua Bank. Against this amount on deposit, he draws his check in strict business fashion, which check is duly honored and cashed. If at the end of the term any surplus remains to his credit, he has entire right to dispose of it as he may choose, but no money from home is granted a boy exceeding the original sum stipulated as his weekly allowance. Just as men work and make money, and learn how to use that money in the outer world, so do these boys work, and make money and use it in this miniature world at Camp Chocorua. By the time they are ready to enter a larger sphere in life, they know and appreciate the worth of money honestly earned, and understand the true art of spending it.

Lest the boys should in truth become very water-sprites, they go, toward the end of the term, for a week's tramp over the hills. A large canvas-topped wagon, drawn by oxen, carries blankets and provisions, and any boys who grow tired and foot-sore can have a lift when they feel like it. They camp out at night and have many amusing adventures by day; and at the different farm-houses to which they come in their wanderings, fresh milk is willingly furnished to the jolly, brown-faced, red-capped lads, who make the hills ring cheerily with their songs and laughter. Each year the youngest boy of the whole party is called the camp "infant," and is accorded several extra privileges, not the least of which is the right of tasting the ice-cream whenever it is made, without having been obliged to assist in making it.

Were I a boy, the life at Camp Chocorua would be my idea of a thoroughly good time, combining, as it does, plenty of fun, and a free, open-air life, with the acquisition of much useful knowledge for one's self, and the habit of exercising a thoughtful helpfulness for others.



A BOYS' CAMP.

BY ONE OF THE CAMPERS.

"UNDER the greenwood tree,
Who loves to lie with me,
And tune his merry note
Unto the sweet bird's throat;
Who doth ambition shun,
And loves to live in the sun,
Seeking the food he eats
And pleased with what he gets,—
Come hither, come hither, come hither,
Here shall he see
No enemy."—

THESE lines from Shakspeare's "As You Like It" came to me again and again as my father finished the reading of a circular which a friend had handed him.

"Camp Harvard," so the circular declared, "is located on the shore of one of New Hampshire's most picturesque lakes, about equidistant from Winchendon,

Mass., and Rindge, N. H. The design of the camp is to furnish boys with a rational and healthy outdoor life during the summer months, where, under competent care and supervision, they can learn to swim, row, fish, do some tramping and mountain-climbing, and engage in other manly sports; form and cultivate good habits, and build up their bodily strength. The cabins are of wood, roofed, floored, commodious, and weather-proof. Each member has a cot. The best of wholesome food is provided."

"I know one of the two young men who established Camp Harvard," said my father, as he ended his reading of the circular. "They are students at the Cambridge Theological Seminary. I have made some inquiries, and I shall be glad to have you spend the summer in the woods with them. I presume the other boys will be much younger than yourself, but you would, doubtless, find many of them companionable; and life in the open air, for a couple of months, would, I think, be pleasant and beneficial to you."

It was a long time before I fell asleep that night. I had always been anxious to camp out, and here was a glorious opportunity.

Then followed busy days. The circular said: "Boys are recommended to bring, in addition to the clothes they travel in, two gray flannel shirts, two pairs old trousers, knickerbockers (one pair corduroy), long rubber coat, swimming-trunks, two pairs heavy blankets (dark), strong shoes (one or two pairs with rubber soles), old overcoat, ordinary underclothing, stout red belt, high stockings (two pairs dark red), slippers, night-shirts or *pajamas*, brush and comb, sponge, towels, soap-case, two tooth-brushes, tennis racquet, skull-cap, belt-knife, and an old jacket."

Mamma saw that I was supplied with all these things, and on the morning of July 1st I took my place on a railroad train bound for Rindge. As we approached Rindge, I spied a large mountain-wagon with four horses drawn up alongside the shanty which served as a depot. I was confident that this was for the campers, for it already contained five boys. Ten boys left the train. The divinity student, who was one of the "masters" of the camp, and whom I had already met in the city, welcomed me, and we all took seats in the wagon. Up hill and down we traveled, and the horses seemed to enjoy it as much as we did. Mountain drivers have a way of slowing up their horses going downhill, and sending them up on a gallop. Now the road wound along a narrow ledge beside Monomonock and thence onward through a dense forest, where tall, straight sugar-maples raised their leafy crowns high in air; smooth beeches, with round, gray trunks, stood like massive pillars; and great yellow birches, with shaggy, curling bark and gnarled limbs, rose like monarchs above the lesser trees. Finally, a sudden turn in the road brought us face to face with the words, "CAMP HARVARD," in large red letters on a sign suspended from a noble oak. The gate-bars were down, and a ride of less than half a mile farther

brought us to a pretty grove where clustered the cabins that composed the camp.

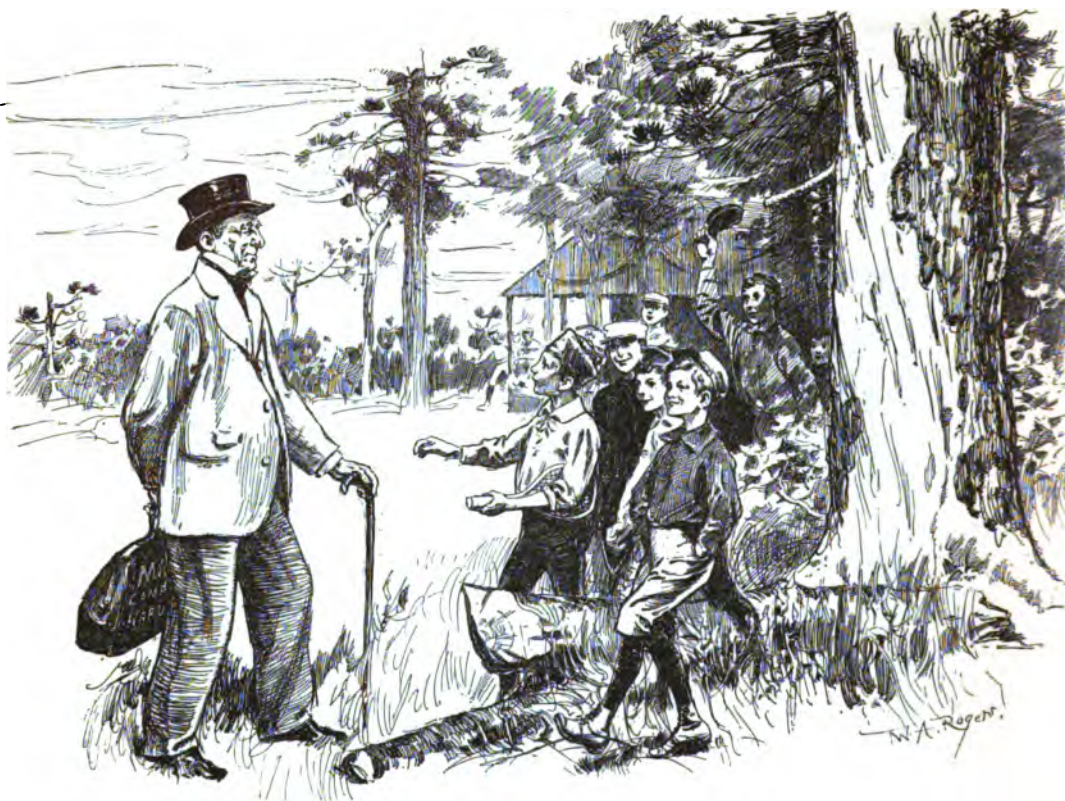
Who has not felt the pleasures of life in the forest? It is quite impossible to put them into words, or to make one who has never experienced them understand what they are.

There is a sense of freedom and freshness every hour. A round of simple, natural toils and amusements fills up each day. The ear soon becomes attuned



The morning plunge in the lake.

to the surroundings, and it begins to hear a gentle sound, like the dropping of ceaseless rain. It is the pattering of the minute particles falling from spruce and pine and hemlock, to mingle with decaying roots and underbrush and form the rich, dark forest-mold on which every step falls so softly. Then there is a rustling of leaves, a pattering of quick, light feet, and a red squirrel runs along a fallen trunk, peers at one curiously, and half in fear, half in audacity, gives its sharp, shrill bark. A little bird which one can not see pierces the air



Arrival of the mail. (See page 264.)

with a slender, long-drawn note. A woodpecker beats his sounding tattoo on a hollow tree, and, growing bolder, comes nearer and nearer, until perhaps he ventures to try the very trunk against which you are leaning.

Everything about the camp was examined by us with great interest. First, the cookhouse, where a man was preparing dinner. This cabin contained a range, two long tables, a refrigerator, and a great quantity of cooking utensils. All the dishes, cups, saucers, and platters were of tin and shone like mirrors. Adjoining, was the storehouse, which was the base of table supplies. The sleeping-cabin was about fifty feet in length and oblong, with a slanting roof. The upper half of sides and rear were "flaps," swinging on hinges. These were open during the day, but usually closed at night. Above the flaps was an open space of fourteen inches all around, and over this the eaves projected. Cots were ranged about the sides of the cabin, and choice of these was decided by lot. At one end was an open veranda, where the dining-tables stood. Large reflecting lanterns were placed at intervals, and several small lights hung in a row near the entrance.

There were an ample medicine chest and other useful camp features, and over one end of the cabin was a loft for trunks. Fifty feet from the cabin was the beach. The pretty lake showed scarcely a ripple upon its fair surface. It was three miles long and at some points a mile wide, with many coves and inlets. Part of it seemed like a succession of small lakes. Along the shore, were boats in great variety, from the flat-bottom fishing-boats to the racing-gig with its outriggers and delicate lines. The silent hills beyond lifted themselves toward heaven in the glory of enduring strength, while old Monadnock towered aloft as commander over all.

The tooting of a horn summoned us back to head-quarters. Trunks were put in place, blankets and the camp toggery brought forth; we exchanged our city clothes for the latter, and life at Camp Harvard began. Consulting the bulletin, I found myself assigned to duty as "table-boy," with one of the fellows who came up on the train as my associate. It was new work for me, but one of the masters took hold with us. The table was soon set, and a steaming hot dinner was brought from the cookhouse. Grace was said by one of the masters, the company all standing with bare heads; then caps were resumed and hungry appetites began to be appeased. Great milk-cans, each holding ten quarts, were brought up from the icehouse. The supply of bread, vegetables, or meat needed constant replenishing. When dinner was over and the table had been cleared and the floor swept, my duties ceased until supper-time. The camp work was done by detachments of boys whose assignments varied with each day. A bulletin containing the assignments for the following day was posted each evening, so that every boy knew in advance what was required of him. All campers, masters included, shared the daily labors. The plan succeeded admirably. Each boy grew to be particular in the discharge of his duties, for neglect was seen to be a boomerang. For instance, if the boy whose special care happened to be drinking-water, failed to keep up a fresh supply, the other fellows who had to suffer for his shortcomings made life a burden to him; and so the whole camp acted as a sort of police force to keep each member up to the mark. This arrangement transferred much responsibility from the masters to the boys themselves, and a sense of responsibility is a good thing for anybody.

After supper, a roaring camp-fire was built, and by this time we all were very well acquainted, and gradually came out of our shells. The masters were plied with questions, and yarns were spun. Perhaps the pleasantest feature of camp life was the evening gathering around the blazing logs, and the nine o'clock horn always seemed to toot ahead of time. The brother of one of the masters had spent a year among the mines and ranches of Colorado, and his graphic descriptions and thrilling tales were admirably adapted to our willing ears. Songs we always had. They may not have ranked high as literary productions; any lack in this respect, however, was more than made up by their

spirited rendering. Here is one, to the tune of "It's a way we have at old Harvard":

"It's a way we have at Camp Harvard,
It's a way we have at Camp Harvard,
It's a way we have at Camp Harvard,
To pass the time away.
If I'd a son or a ward, sir,
A 'dig,' a prig, or a bard, sir,—
I'd send him to Camp Harvard, sir,
To pass the time away.

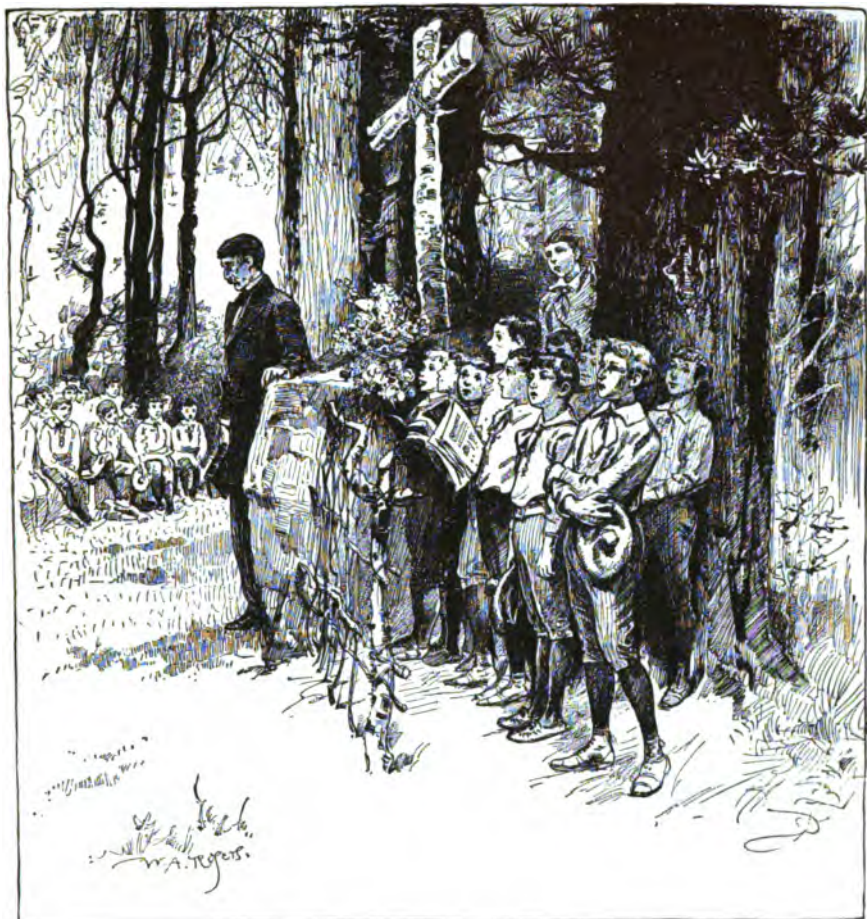
"For we'd like to have you know, sir,
That shirking is no go, sir;
First work, then play, and so, sir,
We pass the time away.

"Now if you really wish, sir,
An epicurean dish, sir,
Just wait till we bake this fish, sir,
To pass the time away."

—and so on through several stanzas.

By ten o'clock every night, we wrapped ourselves up in our blankets, lights went out, and silence reigned. I did n't chafe much under this rule, for the true camper is always asleep as soon as he lies down. The next thing I heard was a buzzing sound—the alarm-clock had rung—it was half-past six, and the sunlight was streaming in upon the campers. Several of us jumped into the lake for a bath; later in the season this morning plunge became general, and every fellow had to report with soap and tooth-brush. After breakfast, there came the usual camp work,—lanterns to be filled, the sleeping-cabin to be swept out, various "police" duties to be attended to, and fuel to be provided; at eleven, there was instruction in swimming. And so the days went by. The work was so systematized as not to fall heavily upon any one person, unless he shirked; and there was ample time for base-ball, cricket, tennis, fishing, boating, and other amusements. When the days were very warm, hammocks were very popular. The Fourth of July was celebrated with appropriate exercises. The stars and stripes floated gayly from our staff, and the cabins were decked with bunting and small flags. At night, the farmers and woodsmen, with their sisters, cousins, aunts, and sweethearts, began to swarm down upon us and lined the lake shore. Our fireworks were set off from a scow anchored one hundred yards from land, and the effect was fine.

Sunday morning breakfasts were after the most approved New England fashion,—baked beans, brown bread, fishballs, and chocolate. Everybody was expected to write a letter home during the forenoon. After dinner came the



The chapel.

choir rehearsal, followed by a four o'clock service in a picturesque little opening in the woods which nature seemed to have designed for a chapel. There rough benches had been made under the shadowy trees, and the sylvan chancel had been carpeted with moss. At the back of the chancel, stood a great rude cross, outlined boldly against the somber background of dense forest; and directly before us was a rustic pulpit. Our Sunday service in this woodland sanctuary was attended by large numbers of strangers, many driving a distance of twelve or fifteen miles. One of the masters acted as the minister and read the service of the Episcopal Church. The chants and a familiar hymn were sung to a violin accompaniment. Then came a short address.

A collection was always taken up in behalf of the Charity Fund, which, at the end of the season, the boys voted to divide between the Sheltering Arms Nursery of Brooklyn and the Boys' Home in Boston.

The mail arrived at noon and sunset each day, being brought by "the captain," an aged member of an historic New Hampshire family. The captain was often accompanied by his good wife. She was a motherly creature, and both were prime favorites at camp. The captain had served his country in the war, and had many a yarn to spin.

The camp dog was a splendid Newfoundland named Duke, and he was the champion swimmer. Two of the campers had cameras and took photographs, which they sold at good profit.

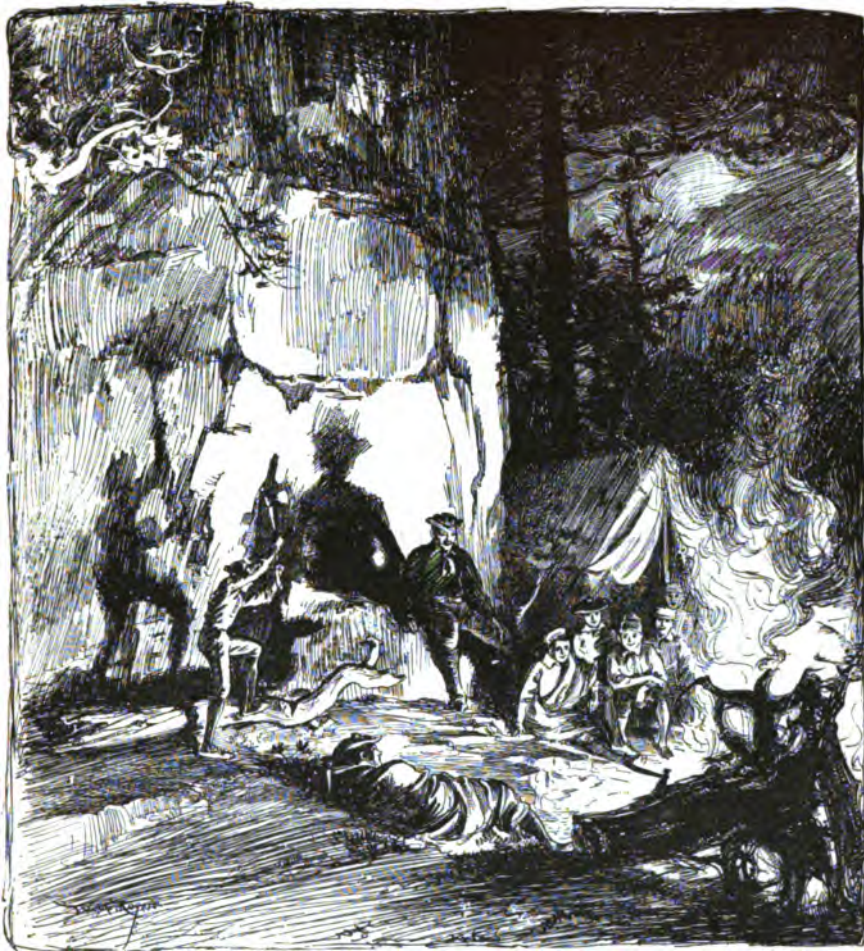
We were often visited by city people boarding at some one of the farm-houses within a radius of ten or twelve miles. Some of these visitors came often, and apparently found considerable satisfaction in observing the details of camp life. Some of us knew a number of Boston and New York people at one of the most popular of these boarding-houses, and one day these friends gave us a most enjoyable entertainment, consisting of a lawn-party, a tennis tournament, and a supper. At another time, we went to a sheet-and-pillow-case party at the same place. Later on, some friends at another boarding-house delighted us with a series of tableaux and charades, followed by supper.

Several business partnerships were formed among the boys. Contracts for work were awarded to the firms making the lowest bids. The successful bidders would hire other boys to help them. The specifications had to be strictly observed. Among other things, a new wharf was built, one of the cabins shingled, and another covered with tar-paper.

Boys could do as they pleased with money earned in this way. Idleness was not popular.

One fine day, we took a long tramp up Mount Monadnock. An early start was made, and by noon we had covered more than half the distance. Halt was ordered in a shady grove, and before long our wagon arrived with blankets, rubber coats, cooking utensils, provisions, and various tools. We had a substantial lunch while resting on the banks of a pretty brook, before we resumed our march.

We soon reached the base of the mountain, and then the climb began. But it is a long lane that knows no turning, and rest came at last. We drove stakes in a picturesque glen on a plateau just below the summit,—a well-chosen spot, shielded from the wind. A bountiful supply of fuel and of pine boughs for bedding was immediately secured. A fire-place was built, and our supper soon began to stew in a great kettle which hung from a tripod. One of our favorite dishes was flapjacks. Numerous visitors came from the fashionable hotel down the mountain, where, the next evening, an impromptu entertainment was given to us. We were on the mountain three days, and they were full of



Camping out on Mount Monadnock.

incident and pleasure. At night, we slept around the blazing logs, and two boys were assigned to stand watch each hour, so that no one was deprived of much sleep. Every fellow washed his own plate, cup, knife, and spoon after each meal, and submitted them for inspection to one of the boys who acted as assistant-master. We all were sorry to leave the old mountain. But it was good to plant foot once more upon our native heath. And Camp Harvard was always dearer than ever when we returned to it after such an expedition.

Until he could swim a certain distance, no camper was allowed in the boats. All of the boys were soon quite at home in and on the water. One of the Philadelphia boys made the best mile record. There were various organizations in

camp, such as cricket, base-ball, tennis, and rowing clubs, and a society of naturalists. Then there were various committees. The steward of the Charity Fund was very energetic, and before we broke up camp, he had collected a great quantity of used clothing, which we voted to divide between the newsboys of New York and Boston.

On August 13th and 14th came the annual athletic meeting. There were all sorts of exercises, with first and second prizes in each, and entries closed on the 12th. Crowds of visitors came each day. The tennis tournament was hotly contested in both singles and doubles, but the boat-races and tug-of-war were the most exciting events. Long and short distance walking and running; sack and obstacle races; throwing the hammer; climbing; running, standing, and broad jumps; diving; swimming contests,—all were included in the programme. On the night of the 14th we entertained a large company of visitors at supper, and a lady very gracefully presented the prizes. Then followed fireworks and music. I had won either first or second prizes in several events, and experienced the proud distinction of having my name telegraphed to a Boston paper, whose editor was rusticated near by. Some of the records were very good, considering that the boys, with the single exception of myself, were only from ten to fourteen years old.

There was not a single case of serious accident or illness for the camp diary to record. We were all healthily bronzed, and were as hardy as only life in the open air can make boys; and I am sure that camp life enabled us all to do better work at school during the winter.

We broke camp on the morning of September 1. The night before, we had as guests our neighbors for miles around. Our good friends the Deacon and the Captain each made touching speeches, and the camp resounded again and again with three times three "'rahs" for them and other summer friends, each named in turn. The night was very cold, but every heart was warm. Sky-rockets shot through the air; bombs, flower-pots, and other fireworks exploded, and Lake Monomonock looked almost like a sheet of fire. Then amid this blaze of glory our guests departed to the tune of our favorite song. Lake Monomonock settled down to its somber stillness; old cloud-capped Monadnock loomed above us like the great pyramid, and now came a realizing sense of the sad parting which the morrow threatened to bring us.

Morning came at last. The wind blew fresh and made the air as clear as crystal. Four-horse teams were in readiness, horns were produced, and, with one long last look, off we started. Our woodland home never seemed so fair as when we turned our faces away from it. Those fragrant pine-trees had heard boys cheer before, but never until now with such lusty vigor and manifest feeling had come forth that inspiring watch-cry of:

"'Rah! 'rah! 'rah! 'Rah! 'rah! 'rah! 'Rah! 'rah! 'rah! CAMP HARVARD!"

SWIMMING AND WALKING.

“Wilt thou, Cassius, leap with me into this angry flood and swim to yonder point?”

SHAKSPERE.



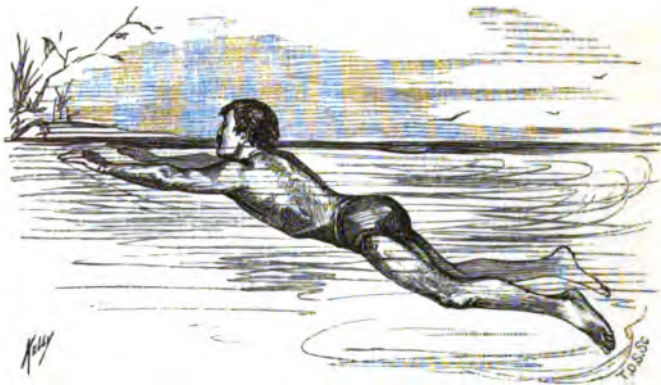
A TALK ABOUT SWIMMING.

BY SANFORD B. HUNT.

HANGING in the shrouds of a sinking ship on a wild November afternoon, the engine-room flooded from the leak, the steam-pumps not able to work, my back tortured beyond endurance with hard labor at the levers of the hand-pump, the deck swept by the bursting seas, a wild and angry sky above, the lee shore perfectly horrible in the tempest of its waves and the thunder of the surf that went rolling and charging by squadrons of billows over a half mile of low sandy bottom, I asked myself whether, if the ship broke up, I could manage the under-tow,—that merciless drag backward of the sea, the topmost wave washing the swimmer illusively toward the shore, the undermost sucking him down and out. I answered myself with an emphatic "Yes!" But the experiment was spared me, and I got ashore next morning in a life-boat. Ever since that

awful hour and night, I have had a sincere respect for the science and art of swimming, in which, next to God, then rested all my hope and trust.

But, before we talk about fighting an under-tow in a wicked sea-way, let us discuss the principles and methods of swimming. To drown in a river, with the shore only a few yards away, when any dog or donkey would reach the land, must involve a feeling of personal humiliation as well as despair. To be self-trustworthy is the first thing in moments of danger; but



The proper position.

the art of swimming has a high value in the saving of other lives, and is, besides, a luxury and accomplishment worth the having, for the mere fun of the thing. In our civilization, swimming is an acquired accomplishment. It is



Diving.

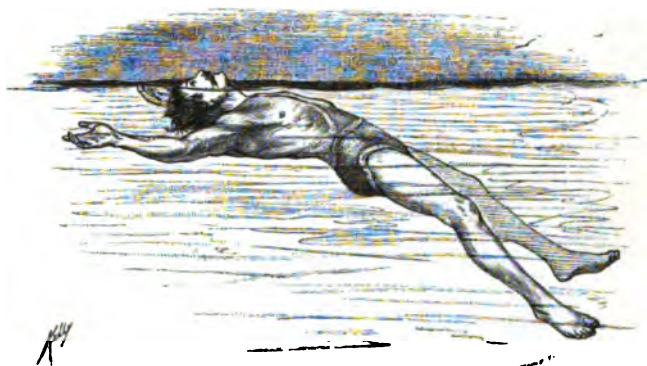
understood to be a natural function with nearly all kinds of animals, human beings forming the leading exception. The inability to swim is in all cases a defect of education. If we do not know already, let us learn how.

To an expert swimmer, sinking is impossible, except from cramp or exhaustion. The weight of a human body is just about that of the water it displaces; but the body weight is unevenly distributed, the lungs being the bladder and the head the sinker,—so that the first rule in swimming is to keep the head well back on the shoulders, where it will rest immediately above the lungs. But, before this, the beginner should observe a few rules of safety.

Get accustomed to the shock of water. Wade slowly into a smooth shallow place, turn and face toward the shore, duck under in water deep enough to cover the body, get your head wet, hold your breath when under, snort as you come to the air again, resisting the inclination to breathe in first; and then, in a depth of a

foot or two, lie down, face downward, and touch the tips of your fingers on the bed of the stream. You will find that a very slight lift, hardly two ounces, will keep your head afloat, but not your heels. Use them as oars. Drop out backward into deeper water, walking on your finger-tips, and you will find that the more of your body is under water the less weight you have to carry. The only parts to keep in the air are your lips and nostrils. Make these the only exposed surface; hollow your loins, and carry your head well back, so as to have it perpendicular to the lungs.

All this is mere paddling; but you will soon find that keeping afloat is no trouble, unless you keep too high and try to swim as much in the air as in the water. You must remember that you have to displace as much weight of water as the weight of your own body. You can not walk upon the waves or climb out of them without a support. In swimming you must lie low. The legs should be well under, and so should the hands. The attitude should be as in the first illustration, — the chin in the water, the legs at an angle of thirty-three degrees. The theory is that you should use the feet as a counterpoise to the head,—the chest, the buoyant part of the body, being the fulcrum of the lever.



Floating.

If your heels go up, your head will go down. Now stop paddling, abandon the grip of your hands on the bottom, keep your head toward the shore, and strike out. The first illustration will show the attitude. Two feet depth of water is enough for the lesson.

Keep both hands well under water. You can't swim in the air. Hold your fingers together, the palms of the hands slightly hollowed, the head well back, the chest inflated, and strike with all four limbs in unison of movement. The hands and feet will act as propellers, the hands moving backward and downward as low as the hips, and well outside of the body, the feet drawing together and pushing down at the same moment. Give full spread to your hands and feet. Their resistance to the water is your propelling force. Then gather, frog fashion, and repeat the motion. You rid yourself of the sense of danger by keeping in shallow water and striking toward shore.

Work in that way awhile, and the temptation will be irresistible to swim *from* shore; but this should be very cautiously indulged until you feel sure of yourself.

When you have thus learned to swim a half-dozen strokes, all of the rest is mere practice in a delightful school, where there is more fun than work. Water frolics are high sport, and the best frolic of all is a good dive.

The fun of a good dive is fun indeed. I have often "fetched bottom" at fifteen feet, and brought up a big stone to prove to my comrades that I had been "clean down." But once, in water like crystal, in the Upper Lakes, where the pebbles could be seen at the bottom, I came rushing up with my head crackling, and saw an old fellow grinning at me. I hung breathless to a wharf-pile, and he casually informed me that the water was twenty-six feet deep, "thar' or thar'-abouts."

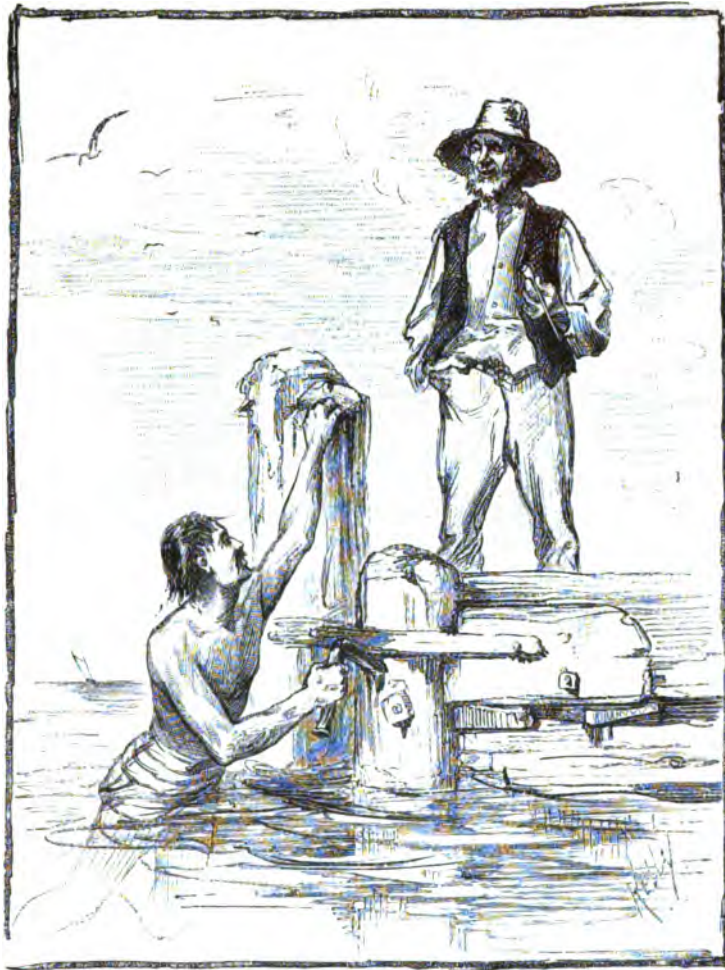
Jumping from a height is a doubtful job. Recollect that in everything connected with swimming you are top-heavy, and that water is incompressible. If you get off your balance while dropping, and fall on your side, either you will be drowned or your mother will need, next day, all the cold cream in the neighborhood. I have painful recollections on that subject. Two days in bed and a maternal lecture of the same length were too much to pay for that one dizzy, sidewise rush through the air. If I had taken my leaden head for a plummet, I should have been spared the blisters on my body. I ought to have dived.



Treading water.

"Floating" is the best illustration of the real buoyancy of the human body. It needs only self-possession and still water. There are two attitudes, one of which seems the more scientific, but which I never worked with any considerable success. It is accurately shown in the illustration on page 271. The position pictured therein is theoretically correct. I have seen such floating done without the motion of a muscle, except as the lungs were kept inflated. Only the mouth and nostrils are out of water, and the arms, extended backward, balance the legs, the lungs being at the fulcrum. But, as a personal habit, I float better with my legs deeper in the water, and my hands wrapped under the small of my back, the body in a semi-perpendicular position. You have plenty of time to breathe if you are only self-confident.

In "treading water" there is a nice illustration of buoyancy. It is a great rest sometimes. The propulsive force of the tread of the soles of the feet against the water below them, with the buoyant power of the lungs supporting the head perpendicularly above them, carry the



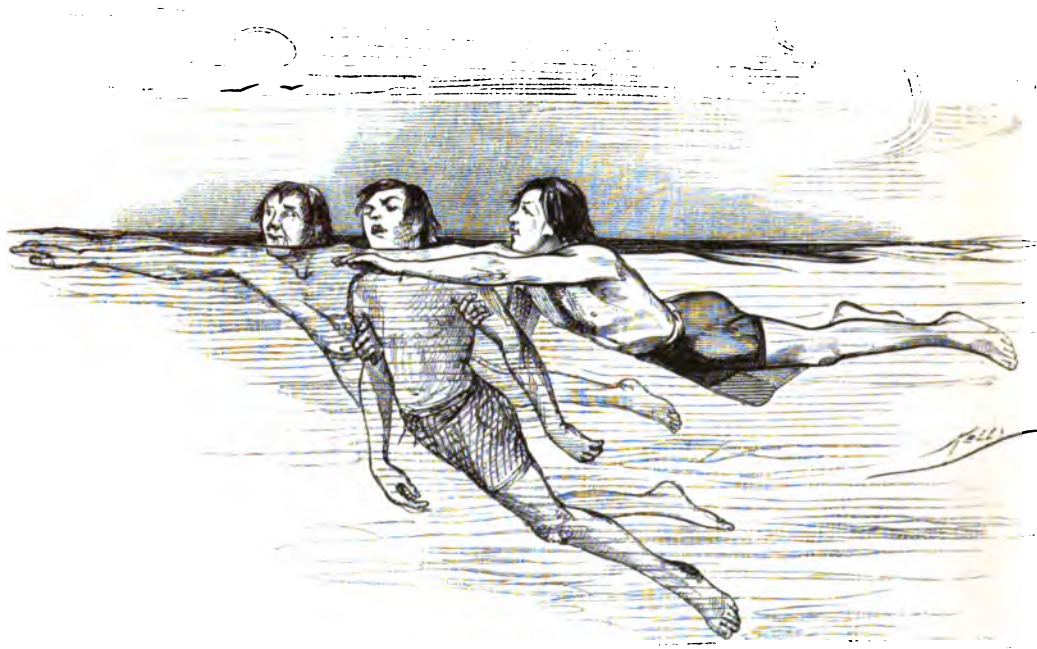
"He informed me that the water was twenty-six feet deep."

head clear out of the water, and make a lazy but secure support. The hands should rest quietly on the hips, as shown in the illustration. There are a dozen other feats in swimming, such as swimming on the back, which is lazier than any other method.

LIFE RESCUE.

The true plan to follow, when safety is the call, is to swim with everything below the chin well down under water, the head well back and resting centrally on the floating power of the lungs. But what will you do when your comrade

is tired out and drowning? That depends. If he is cool and reliable, get in front of him, let him place his hands on your hips (not your shoulders), and you can carry him quite a distance. That supposes that both parties, rescued and



Saving a companion.

rescuer, understand fair play. The weaker party is the one that ought to drown, if he shows any disposition to drown his friend by a miserable, cowardly death-clutch at the only floating thing around him. In the case of the death-clutch, go to the bottom with your man and leave him there. There may be an unpleasant wrestle, but the real drowning man is ready to quit his prey when he strikes bottom. The better man has his right to come to the surface and swim ashore.

But from a considerable swimming experience, and some rescues, there comes one absolute rule: Never face a drowning man. He welcomes rescue so eagerly that he will hug you around the neck and take you down. The safest and best thing to do is to get behind him, and, unless you are left-handed, put your left hand under his right arm-pit. The lift you give him will be enough in ordinary water. He can be coaxed to help himself, and if he is a reasonable being you can bring him to shore. If he is insane with fright, recollect that you are to be both prudent and heroic. Get away from him, clutch his ankle with one hand

and tow him ashore. If the bank is near, he is not likely to drown on the way. If he does, it is not your fault. But a brave swimmer is master of his element. I saw two lads—I saw one of them, at least—carry a companion, who could not swim, across a deep, broad and rapid river, just for a frolic. It was a reckless thing to do, and the three were used up when they staggered to the shore. They recrossed from a point up the river, where they found a good light pine slab, and towed John across on that.

But those same two young scamps once rescued a drowning comrade in a way that was remarkable for its neatness. The poor fellow was in mid-stream, cramped and exhausted, and barely able to keep afloat. Who was first to the rescue was never decided, but in the critical moment each was behind him, each with a hand under an arm-pit; he was almost a dead-weight on their hands, and they swam him ashore, more dead than alive. It was a struggle, but they were masters of the situation.

THE UNDER-TOW.

I began this gossip first with a mention of the under-tow. It is by no means a "phenomenon," but something to be read up and studied. Either on the sea-beach or at the great lakes, all the water that is tumbled ashore in heavy waves must go back again. The top-sea rolls in, and the under-sea rolls out. Trust to the former. Keep clear afloat and as high as you can. Abandon the rule I have given you about deep swimming. Secure the friendship of the shoreward wave. Otherwise, if, when you are within ten feet of shore and safety, you drop your



legs to the angle of thirty-three degrees, which is the deep-swimming position, you will find that the under-tow—the under water that flows out to replace the waves that run in—will grab you by the ankles and pull you out and down again. Keep clear afloat, your head well down, your heels feeling the topmost

part of the impelling wave; keep your lungs well filled, and wash ashore. You are not safe until you can easily fasten your hands in the sand or gravel and pull yourself to land. But in shallow water, with a long surf rolling in behind you, the drag of the under-tow can only be avoided by swimming high and letting the waves "buck" you in. The rules for still-water and rapid river currents, in which deep swimming is safety, do not apply in mastering an under-tow. Swim shallow and trust the topmost wave.

Perhaps I ought to add a word about ice rescue, where a fellow skating on thin ice breaks through, and heading toward shore with a pair of skates on his heels, cracks off successive chunks of ice until he is surrounded by them. It is the coldest kind of a baptism, and the hardest kind of a rescue. I was an actor in one when a college chum "slumped" through. The ice was unsafe, and we fished him out by knocking off fence-boards, sliding them out, lying face-downward on the boards, other fence-boards being slid out to us. He caught hold of one, climbed to the surface of the ice with the ready skill of a practiced swimmer, and said, with rattling teeth in the zero atmosphere: "Well, fellows, you did that nicely!" The remark lacked pathos, perhaps, but it was literally true.



"Well, fellows, you did that nicely!"

WALKING AND RIDING.

BY CHARLES M. SKINNER.



WALKING, as a matter of daily necessity, is so seldom a subject for thought that there are some who will express surprise at finding it classed among enjoyable exercises and amusements. Yet its very simplicity and ease ought to commend it to everybody in health, and to recommend it with the greater urgency to those in want of health. The most independent traveler in the world is he who goes upon a pair of stout legs. Trains may be delayed, stage coaches may break down, horses may go lame, the high road may be heavy with mud; but the walker may travel on, if he pays his reckoning as he goes. Railroads and steam-boats are by no means to be despised; they are making the world spin faster than ever it spun before; but they serve the means and not the ends of travel. The ends of travel are instruction and enjoyment, and the closer our relation to the things that teach or amuse us the more benefit will be derived from them. A twenty-mile walk through a characteristic portion of a country will give a truer idea of its scenery, people, language, manners, customs, religion and social condition than we can obtain by riding across one hundred and fifty miles of it in an express train. Little preparation is required for a walking excursion, but to enable the young traveler to pursue his journey with as much ease and enjoyment as possible, the following suggestions are offered:

When you have resolved on a vacation tramp, lay out your route by the aid of atlases and guide books, make a table of approximate expenditures, decide how long you will stop at given points, arrange for receiving your letters from home at certain dates and places, and adhere to these conditions as strictly as possible. Begin practice, too, at once, by walking every day and slowly increasing the speed and the distance traversed. An hour or two of steady walking, morning

and evening, will toughen your muscles, improve your "wind," and give you a zest for what is to come. Your walk will, perhaps, be most instructive if taken alone, for nature will then claim your exclusive attention; but if you are to be one of a party, it will be well for all of you to take your training together, in



"How far, did you say?"

order that there may be some uniformity of speed and endurance among the company. When on the road some will probably complain of the slowness of others, who in turn will grumble at being hurried along too fast. For steady walking, it is quite enough that you cover three miles an hour, and that you are afoot ten hours a day.

Carry but little freight. Some walkers travel with a huge valise that they send by express from town to town, but they are less independent than he whose supplies are carried with him; and I have heard of others who have seen fit to carry on their backs full changes of linen, slippers, clothes-brushes, blacking, shawls, and overcoats. I once traveled

afoot partly through Germany with a young American who was a perspiring martyr to a 40-pound valise and a bundle of wraps.

I will set forth my whole equipment, and you can adapt it to your wishes and circumstances. It is what I carried on three long tours in America and one in Europe, aggregating about twenty thousand miles,—not all traveled on foot, of course,—and I found little need of anything else:

Dress: gauze undershirt; *negligé* flannel shirt; stockings: soft hat; trousers, vest and coat of gray; shoes, "Waukenphast" pattern.

In the pockets: handkerchief; knife; watch; pencils; tooth-picks; note-book; sketch-book; book for rainy-day reading; money.

In the hand: a stout stick.

By the side, suspended by a strap from the shoulder: a leather satchel about a foot long, in which is placed a gossamer rubber overcoat; nightgown; collar; scarf; collar-buttons; telescope drinking-cup; comb; tooth-brush; postal cards; maps and guide books.

There! If you don't burden yourself with more than that, I will guarantee that if you break down by the way it will not be on account of the load you carry. Still, as you proceed, these things will weigh more than they did when you started. It will surprise you to discover how much more a pound weighs before supper than it did after breakfast. You will doubtless accumulate, as you

proceed, letters, pamphlets, photographs, pressed flowers, minerals, and such like, but as soon as you have a batch of them, inclose them in boxes or envelopes and mail or express them to your home address.

We have so far departed from the habits of our early ancestors that most of us prefer warm beds and warm dinners to couches of dry leaves and repasts of herbs and berries, and unless the young tourist is of strong fiber and stronger imagination, he will enjoy himself better if he puts up in hotels, taverns, farm-houses, or barns (if he comes to that), than he will if he sleeps in woods and pastures and picks his nutriment from trees and shrubs. The weather is dreadfully heedless, even of seasoned tramps, and the apple, nut and berry crops are not always abundant. As you may find it necessary to practice economy, however, it is advisable not to put up at large hotels, or to dine at expensive restaurants. So arrange your trip as not to stop at night in cities, unless you wish to spend some time in them, but pass on to the villages and lodge at the taverns; inquire the rates wherever you stop, and pay before going to your room; make sure, before going to bed, that you can find your way out in case of fire; leave your window partly open, for country houses are poorly ventilated, as a rule; deposit your valuables with the landlord, if he has a safe; if not, place them under your pillow; memorize a list of your belongings and run through it, on leaving the hotel, to satisfy yourself that you have forgotten nothing; if you stop in a large city where you intend to devote your time to sight-seeing, engage rooms at a hotel kept on the European plan, pro-

curing your meals in whatever part of the city you happen to be when you are hungry. In case you are lost, benighted, or find the hotels crowded, food and lodging may usually be obtained at farm-houses, but payment should always be made to those whose hospitality you share, even if you have to sleep in the



An inviting gateway.

barn,—no great privation if the hay-mow is well filled. If night comes on when you are far from any habitation, make for a space beneath a tree, or a sheltered nook among bushes or haystacks, first beating about the place with your cane to drive away possible snakes. Stamp down excrescences in the soil, and if you can dig or kick out a little hollow for your hip to rest in, and another for your shoulder, so much the better. Partly unlace your shoes, to ease your feet, loosen your shirt at the throat and your trousers at the waist, put your watch, knife, etc., into pockets where they will not press into your flesh, button your coat to your chin, use your satchel or a heap of leaves for a pillow, spread your rubber coat over you,—and good luck attend your efforts to get to sleep. You can do it with practice. Be sure, in the morning, that you have lost nothing from your pockets.

Bathe frequently, if the season is warm and the ponds and rivers pure and safe. and wash the feet every night before going to bed. If the shoes hurt your feet, soap your stockings. Chafing can be prevented or relieved by applying lard, oil, or vaseline to the irritated surface. Shake the dust out of your clothing on taking it off, and let it air all night. Wear nothing to bed but a nightgown, and air that on taking it out of the satchel and before putting it back. If the nightgown be arranged with a collar, a tie can be attached and it can be worn during the day, when the flannel shirt is being washed. Stockings are hardly worth duplicating in your baggage, as you can wash them at night and allow them to dry, and when they are worn out, a cheap pair may be bought at any country store. Your clothing should be strong and easy; you can wear out old clothes very successfully on a tramp. Shoes should be water-proof, ample in size, with soft uppers and stout soles. Steel pegs or hob-nails will not disqualify them from use in roads and fields, but steel wears smooth and becomes so slippery as to make walking on flagstone sidewalks and mountain ledges troublesome and dangerous.

Boys have a fondness for fire-arms, and most of them in going on a tramp wish to include a pistol. Don't do it. You are liable to hurt other people if you don't hurt yourself, and you may fall into trouble through shooting some honest farmer's pigs or poultry. Your stick will be defense enough in civilized regions, and in a wild country you require a bigger "shooting-iron" than a pistol. If, in the mountains, you encounter a bear, jump up and down and yell, and the bear will be as well scared as you are. Rattlesnakes are the only reptiles that one need look out for, and they have the honesty to spring their rattles when they intend mischief. They are slow of motion and can "jump" only two-thirds of their own length, and even at short range are apt to hook their fangs into clothing, leaving the object of their spite unharmed. They are easily killed with stones or sticks. In case of a bite by a rattlesnake, open the wound with your penknife, letting it bleed freely, and suck out the poison if possible; then make quick time to the nearest settlement and summon a doctor. Fortunately



Just the spot for a nooning.

the localities of this serpent are pretty well defined, and he can generally be avoided. There is a more familiar pest that is likely to make his presence known on your travels, and that is the mosquito. He is no respecter of persons, and I know of but one way of keeping him off; that is, by protecting your head and neck with a bag of gauze that covers the hat and rests on the shoulders. I have encountered mosquitoes in such swarms in the Rocky Mountains, close to snow-line, that but for one of these bags I should have been "eaten up alive"—to quote a popular phrase in fly-time.

Suppose, in the course of your jaunt, you lose your way in the woods. Don't allow yourself to become excited and start off at a tangent, because then you will waste your time in walking around in a circle. One leg is usually a trifle stronger than the other, and the strong leg takes longer steps. Thus a left-legged man will walk entirely around his right leg if he starts on a walk through the woods, and will make a circle from one to six miles in circumference. If you are lost, try, by noting the position of the sun, or by taking observations from a rock, hill or tree-top, to get your bearings, then make your start. Suppose it is late in the afternoon in summer, the sun is in the west and the shadows fall to the east; see, therefore, that you constantly cross the shadows of the trunks at right angles, if you are going north or south, and that they are in a line with your path if going east or west. But suppose the sun is obscured. Then, after laying out your course you must maintain it by "ranging" trees or other objects; that is, by keeping two or three trees in line. Note two trees, one a furlong from you, and another a furlong beyond that, if the forest is sufficiently open to enable you to see so far; if not, then as far as you can see clearly, and walk toward them, keeping them in line. As you approach the nearest one, select a third in line with the second, and as you approach the second, "range" a fourth one, and so on. This will keep you steadily on your course. If the forest is too dense or difficult for even this, follow the first watercourse down and go with the current. You are quite certain to reach open country in a little while. If you find it necessary or expedient to travel across a broken and unfamiliar country by compass, proceed in the following manner: with your map, or by means of observations from some elevated point, ascertain the direction in which you must proceed. Your compass-disk or needle always points northward; therefore, by sighting a peak, or tree, or house, or steeple, in the direction that you must take, with your compass in hand for reference, you will see in what direction it lies from your present stand-point. Suppose it is west south-west. Turn the compass-case until the black line inside comes opposite the initials W. S. W., and set out. There is no need of watching the compass all the time: proceed on the principle of ranging. Notice a tree half a mile west south-west of you, and walk in that direction. When you get there, select some other object lying in your path and aim toward that, proceeding by these stages until you reach your destination.

As to your mental outfit, the trip will be enjoyable in proportion to what you get out of it, and while it is by no means to be regarded as a scientific excursion, a little knowledge of geology, mineralogy, and botany, will open your eyes to

wonders that lie along every roadside, but are unregarded by nearly every passer-by. If you are walking in Eastern Massachusetts, up the Hudson, around Lake George, near Quebec, or over Southern battle-fields, a smattering of history will give zest to the tour; and in Europe you will see things with but half an eye if you have neglected to learn anything of its history, art, and architecture.

As to routes: well, there is such a profusion of them in this country that it would be easy to fill a book with suggestions on this subject alone. Mountain regions and lake and river districts, that offer diversified landscapes and inspiring views, are, to most travelers, more stimulating than low countries and thickly populated sections. The New England coast, from Cape Cod northward, is full of scenic charm, and as the theater of the struggles and trials of the pilgrims it is imbued with romantic interest. The White Mountains, Green Mountains, Catskills, Adirondacks, Berkshire Hills, and even the lesser extensions of the Alleghany system, are feasible walking-grounds, with fair roads, good inns and grand scenery. The valleys of rivers like the Hudson, Delaware, Connecticut, Potomac,



Off for a tramp.

and St. Lawrence; the rude and unprogressive country lying about the Basin of Minas, in Nova Scotia,—the land of Evangeline; the shores of Lakes George, Champlain, and Winnepesaukee, are warmly recommended. Of course,



A field for exercise.

our Rocky Mountains are the most alluring of all, but to travel among them requires money, time, and a cumbrous outfit, while experience is also necessary, and a certain amount of hardship inevitable. In the next century these mountains will undoubtedly be traversed by safe roads, and will abound in good hotels.

It is greatly to be wished that our American girls would indulge in pedestrian exercise more freely than they do. It is no unusual thing in the favorite walking-grounds of England, such as the Lake district, for instance, to meet a bevy of British maidens, each girl bright of eye, rosy of cheek, unconfined of foot and waist, pacing briskly along the roads in company with fathers, brothers, or sweethearts, and making rapturous comments on the scenery. A walk through our Catskills is an excellent cosmetic.

As to riding I have to plead slight experience, and while it is exhilarating, it is also trammeling, in a measure, for the rider is less free to leave the road and follow his fancy if he is on four feet than if he were on two. Long rides are fatiguing to the inexperienced, and the walker will arrive at the end of a twenty-mile tramp in better condition than the unpracticed rider who has traversed that

distance on horseback. If one determines on an equestrian excursion, let him know his horse well; and let the animal be thoroughly broken, sure-footed, and sound of wind. Nothing is more distressing than to attempt to ride a lame or broken-winded animal, that will gallop or canter just long enough to put you in the humor for a good run, then, suddenly checking himself, lumber on at a slow trot or discouraged walk. Care must be taken in feeding, watering, and sheltering your steed; he must be well groomed, and the saddle must be so snugly adjusted as not to chafe his back. The equestrian, though he should not go far from districts where fodder is abundant, has a larger choice of routes than the pedestrian, because, in thinly settled countries, he can cover the long distances from settlement to settlement, or from one inn to another, with more certainty,—a circumstance that may stand him in good stead when night is impending or a storm coming on. As a field for horseback exercise, the ocean-like reaches of our Western plains are unrivaled, despite a possibility that the horse may set foot in a prairie-dog hole and pitch his rider into a knot of cactus. The immense expanse, the hard soil, the bright sky and bracing air, make existence in the saddle a luxury, and it causes the pulse to bound merely to see the picturesque cow-boy on his broncho, skurrying like the wind to “run in” straying members of his herd. It is a question whether a horse should be shod or not, particularly a horse that is used only in country roads and fields. It is held by many that the horseshoe is a useless and even hurtful contrivance; but if it is used, see that your animal is well shod, for loosened shoes are a common cause of lameness.

Whether you go in the saddle or afoot, carry your money in safe pockets, or in a belt worn next to your undershirt; live simply and temperately, take sleep enough; rest at noon if the day is warm; treat everybody politely, but don't be familiar on short acquaintance. Don't fret. Keep your eyes open and your courage up, and you will gain in knowledge, manhood, and self-reliance.





HOW TO RUN.

BY THEO. B. WILLSON.

VERY few boys know how to run.
“Ho, ho!” say a dozen boys. “Just bring on the boy that can run faster than I can!”

But, stop a moment. I don’t mean that most boys can’t run fast—I mean they can’t run far. I don’t believe there is one boy in fifty, of those who may read this, who can run a quarter of a mile at a good smart pace without having to blow like a porpoise by the time he has made his distance. And how many boys are there who can run, fast or slow, a full mile without stopping?

It hardly speaks well for our race, does it, that almost any animal in creation that pretends to run at all can outrun any of us?

Take the smallest terrier-dog you can find, that is sound and not a puppy, and try a race with him. He’ll beat you badly. He’ll run a third faster than you can, and ten times as far, and this with legs not more than six inches long. I have a hound so active that he always runs at least seventy-five miles when I stay a day in the woods with him; for he certainly runs more than seven miles an hour, and if I am gone ten hours, you see he must travel about seventy-five miles of distance. And then, a good hound will sometimes follow a fox for two days and nights without stopping, going more than three hundred and fifty miles, and he will do it without eating or sleeping.

Then, you may have heard how some of the runners in the South African tribes will run for long distances—hundreds of miles—carrying dispatches, and making very few stops.

I make these comparisons to show that our boys who can not run a mile without being badly winded are very poor runners.

But I believe that I can tell the boys something that will help them to run better. I was a pretty old boy when I first found it out, but the first time I tried it I ran a mile and a quarter at one dash, and I was not weary nor blown. And now I am going to give you the secret:

Breathe through your nose!

I had been thinking what poor runners we are, and wondering why the animals can run so far, and it occurred to me that perhaps this might account for the difference, that they always take air through the nose, while we usually begin to puff through our mouths before we have gone many rods. Some animals, such as the dog and the fox, do open their mouths and pant while running, but they do this to cool themselves, and not because they can not get air enough through their noses.

I found once, through a sad experience with a pet dog, that dogs must die if their nostrils become stopped. They will breathe through the mouth only while it is forcibly held open; if left to themselves they always breathe through the nose.

So, possibly, we are intended to take all our breath through the nose, unless necessity drives us to breathe through the mouth.

There are many other reasons why we ought to make our noses furnish all the air to our lungs. One is, the nose is filled with a little forest of hair, which is always kept moist, like all the inner surfaces of the nose, and particles of dust that would otherwise rush into the lungs and make trouble, are caught and kept out by this little hairy net-work. Then the passages of the nose are longer and smaller, and more crooked than that of the mouth, so that as it passes through them the air becomes warm. But these are only a few reasons why the nose ought not to be switched off and left idle, as so many noses are, while their owners go puffing through their mouths.



A shady place for a dash.

The trainers of men for racing and rowing, and all other athletic contests, understand this, and teach their pupils accordingly. If the boys will try this plan, they will see what a difference it will make in their endurance. After you have run a few rods holding your mouth tightly closed, there will come a time when it will seem as though you could not get air enough through the nose alone; but don't give up; keep right on, and in a few moments you will overcome this. A little practice of this method will go far to make you the best runner in the neighborhood.



The Australian bee-hunter — a champion runner.

THE CAMERA.

"Come, let us see your picture."
SHAKSPERE.



THE AMATEUR CAMERA.

BY ALEXANDER BLACK.



ON the irregular bluff which rises opposite Blackwell's Island, and overlooks the East River, is the house of a busy New York physician. In an upper window may often be seen a glistening mahogany box, to which is attached some simple, but delicate mechanism. This box is a camera, and its wooden eyelid has but to wink within the hundredth part of a second to imprison upon the glass plate hidden within, a perfect picture of the river with all its activity and bustle at that moment. In his consulting-room below stairs, the doctor is able to see what is happening upon the river, and when he hears the bellowing of a Sound steamer, and sees her pushing her pompous white nose through the river, he will (unless, perhaps, he has stolen her portrait before) touch an electric knob near his inkstand, the wooden eyelid winks, and the picture is taken. When the doctor has time, he goes up and takes out the plate.

• Every neighborhood in town and in country has now its enthusiastic amateur photographer, whose friends look patiently at his prints, and smile a little at his zeal. Every amateur photographer is enthusiastic, because photography is really a very fascinating as well as a very useful pastime. It is a very com-

panionable pursuit. The camera becomes an object of affection, to be cherished as a stanch friend. And it makes friends with all sorts of folk. I could tell you of a boy of twelve who has made some capital pictures, and without an expensive outfit, just as I could tell you of many sage elderly men who find the art a source of quiet delight.

The best thing you can do if you wish to take up with photography is to make the acquaintance of one of these amateurs. You will find him willing to tell you all about it. Indeed, he will very likely overpower you at first with recipes and advice. And you will scarcely find two people who will tell you the same thing. It will be best at starting to follow implicitly the directions of some one successful amateur, and then, when you have mastered the first principles of the processes, to experiment for yourself. Professional photographers are often ready to be very kind to those who make a pleasure of the pursuit, and a great deal is to be learned in a short visit to a regular gallery. The difficulty in this case is that the professional not only works on a much larger scale, but deals with a different class of subjects. An amateur will be more likely to know the particular kind of mistakes the beginner is liable to make, and will anticipate them in giving hints at the outset.

I purpose setting down here a few suggestions for those ambitious boys and girls who think of taking up photography.

I.—APPARATUS.

The kind of apparatus required is the first thing the would-be photographer wishes to know. There is an old saying about the poor workman being readiest to



The "Detective" camera (see page 294).

quarrel with his tools. If you are careless, you can not make good pictures with the best camera in the world. If you are prudent and sincere, you can make admirable pictures with the cheapest of lenses and a common box. Patience will go farther than any chemicals yet discovered; so that it is advisable, unless you have no occasion to consider prices, to get an unpretentious outfit at the start. I have seen some superb little views made with a \$9 camera. Very good work

has, in fact, been done with cameras costing even less. But the lens is the most important part of the camera, and very cheap lenses are apt to twist the lines of rectangular objects in a very annoying way. Whatever you pay for the box part of the camera, be sure that it is strong, light-tight, and easily adjustable.

When you come to set up a camera out-of-doors on a cold day, you will be very thankful for every little mechanical convenience by means of which the exposure can be made in a hurry,—before your fingers get so cold that you can not unscrew the tripod when you want to pack up. Very handsome boxes can now be had for \$8, \$10 or \$12. It is not a very good idea to pay more for a box than for a lens. The necessary capacity of the lens is



One of the most remarkable inventions of recent years is the "Detective" camera, of which the first in this country was made by Mr. William Schmid, of Brooklyn, N. Y. This camera has no "legs," but is carried under the arm, and the pressing of a knob makes an instantaneous exposure. With one of these, views may be made from the rigging of a ship in motion, from the window of a railroad train, or under any similar conditions. They are intended for use out-of-doors only, as they require a good deal of light. They cost from \$45 to \$85. Other ingenious inventions have recently been made, such as a small camera to be secreted in a false vest, in which a false button forms the opening to the lens.

II.—TAKING PICTURES INDOORS AND OUT.

It is easier to make pictures out-of-doors than in the house, because there is more light out-of-doors, and it is better distributed. With each lens generally comes a series of thin metal plates, pierced by holes of various sizes. One of these stops or diaphragms, as they are called, is slipped through a slot in the barrel of the lens, the size of the aperture to be used depending upon the amount of light and the amount of exposure. Thus, if there is bright sunlight, and you are going to use the cap,—that is, open and shut the opening with the hand,—you can use a very small diaphragm. If you use a "drop-shutter," an appliance for making rapid exposures, the diaphragm will have to be a good deal larger, according to the power of the lens; and if the light is not very strong it may be best to leave out the diaphragm altogether. The smaller the diaphragm, the "sharper" the negative will be. After you have had a little experience, you will be able to tell by looking on the ground glass as to the amount of "light in the box," and to regulate the size of the stop and the time of exposure accordingly. In the case of moving objects a rapid exposure becomes absolutely necessary, and will be the first consideration. There is better light in summer than in winter, more in the open country than in the streets of a town, and more on the sea than anywhere else. It is never advisable to photograph against the sun, that is, with sunlight falling on the face of the camera. Certainly, never allow the sunlight to strike the lens itself, as such an accident will surely "fog" the plate. It is better to have the light come from behind the operator. In every case keep the focusing-cloth over the box while putting in and taking out the slides.

Indoors, the problem of exposure is not only more perplexing, but the object to be photographed has to be specially lighted,—the dark or shadow side has to be lighted up by reflectors, else all the shadows would be hard and black. If you can find any place in the house where a skylight sends down light from above (as in a professional gallery), instead of letting it in from the side, as at a window, that is the place for you to make portraits or groups. If you have no place but a window, cover up the lower part with thick brown paper or a shawl, and place the chair for the sitter two or three feet away. This will give

something approaching a top light. Then light up the shadow side by placing a high-backed chair, a screen, or a clothes-horse with a bed sheet, or something of that sort, over it, on the side of the sitter opposite the window. It is well to place the reflecting arrangement at a slight angle, so that the reflection will, in some degree, be thrown upward. There is, of course, no reason in the world why the ingenious amateur should not build himself a comfortable reflector by stretching some white muslin on a wooden frame, and adjusting this to two uprights so that its angle may be readily changed. As the amateur generally gets along without a "head-rest" for the sitter, he should be careful to see that the patient is seated snugly against the chair-back. The exposure indoors must be ten, twenty, sometimes fifty times longer than out-of-doors. That is to say, where one might make a picture in the twentieth part of a second in the open air, it would be necessary to expose the plate for a full second indoors, and this would be a very short exposure for the house. With a medium-sized stop in a fairly lighted room, it is not easy, even with rapid plates, to get along with less than four seconds exposure; and the probability is that you may have to give seven. In taking children, the exposure has to be so short that it is generally necessary to work with the open tube, without stop. In the case of inanimate objects, a fine effect may be secured with a very small stop and long exposure. If you are photographing an interior, and can take your time, use a very small stop and expose the plate for fifteen minutes, half an hour, half a day if necessary. If a light window comes within range of the lens, you will have an opportunity to display your tact, since the negative would be ruined unless something were done to diminish the glare of light. You may be able to blanket up the intrusive window, excluding every particle of light, and then get illumination from an adjoining window, or through door-ways from other lighted apartments. If you have patience you will then take a small wall-mirror, and, keeping it in motion, cast its reflection into the dim parts of the room during the period of exposure. In the mean time, you may have sheets hung so that they will reflect light while themselves not within range. If the light is too strong in any one part of the room, the corresponding part of the negative will be "cooked" before the other parts are, perhaps, half done, and the result will be unsatisfactory. The easiest way to photograph an interior is, of course, to photograph *from* the side at which the light enters, or across



Taking a portrait at an ordinary window.

[A, covering of lower part of window; BB, angle of light; CC, angle of reflector.]

the angle of light. After the general interior has had sufficient exposure, it is sometimes feasible to remove the coverings from the windows (after carefully replacing the cap on the instrument) and to then give the whole one second, or more, exposure, according to the strength of the light at the windows. In such a case the light should be so arranged that strong streams of light and lines of shadow do not produce an unpleasant effect on the floor or elsewhere. Remember while you are at it that photographing interiors is the most difficult feature of photography.

III.—DEVELOPING THE PLATE.

Now comes the tug of war. All that you have done so far will go for nothing if you are not cool and careful in the operation of developing. A perfectly dark room is wanted, to begin with. At night it will only be necessary to draw the blinds of the room to make it sufficiently dark. But in the daytime every chink that might let in the faintest ray of light must be covered. Blankets and shawls will be very much in demand. A large closet with no windows is



A critical moment.

sometimes useful. If the young photographer is camping out, a dark nook near a stream will answer, unless the moon is high and full. The first of the dark-room properties is a ruby glass lantern. This red "non-actinic" light does not affect the plates during the time required for development. At the same time, let me advise beginning the development with the lamp flame turned low, especially if the plates are "extra rapid." Then there must be a developing-tray and a tray for "fixing." The developing solution turns black the parts of the plates touched by the rays of light; the "fixer" then clears off the remainder of the white film and makes the whole permanent. Recipes for development, like

patent-medicine cures for rheumatism, are amazingly numerous. There are two varieties of developer in common use;—one is called the "iron" developer, because it contains, among other things, protosulphate of iron (photography is something of an education in chemistry); the other is called the "pyro" developer, because it contains pyrogallie acid. "Condensed" developers in



Photographing the twins.

bottles are sold, and are a good substitute for the developer prepared by the photographer himself. An amateur can not do better at the outset than use this ready-made solution. I have used both Cooper's and Carbutt's prepared developers and have found both excellent. As formulas are easily obtainable wherever materials are to be bought, and as directions always accompany each package of plates, I shall not encumber this sketch with details. I shall only advise having the developer a little weak, when you are uncertain as to the exposure, and giving plenty of time, in preference to hurrying matters. If you can watch an experienced photographer, amateur or professional, develop a plate, before going about it yourself, the experience will be invaluable to you. Use plenty of cool water in washing the plate, being careful to let it flow over the surface gently. If you can not secure a room with running water, have a bucketful on one side of you and a waste-dish on the other. In the case of the woods at night, a stream will answer for both bucket and dipper. For fixing small plates, one ounce of crystal hyposulphite (not *sulphate*)

of soda, dissolved in about eight ounces of water, is to be used. Half an ounce of alum dissolved in the same amount of water is sometimes used for immersing the plate in after developing and before fixing, thus hardening the film; but I have found it just as expedient to put the alum in with the hypo (without extra water). In summer the alum is especially necessary, as the film is then especially tender when wet. The developing has generally gone far enough when you can see the outlines from the back of the plate; the fixing is finished when all the white has disappeared, that is, when it can not be seen from the back of the plate.

IV.—PRINTING.

After the negative is dry, you are ready to print. For this process you must have the assistance of the sun (what could we do without good Old Sol?). "Ferro-prussiate" paper requires no special preparation, and after printing, only needs to be washed. These are called "blue prints," and are permanently valuable. For regular silver prints, silvered paper is necessary. The difficulties and uncertainties attending the silvering of the paper make it advisable for the amateur either to get "ready-sensitized" paper, or to procure a silvered sheet from a photographer. I recommend the latter course, since

ready-sensitized paper is somewhat "onsartin" when it comes to "toning." A single sheet, silvered and "fumed" ready for use (cutting into sixteen 4×5 inch pieces), should not cost more than twenty-five cents.

The "toning" of the silver prints is a simple, though delicate, process, for which formulas



Somewhat out of focus.

are easily procured. Remember that if the negative was weak, and if the print lacks rich, dark tones, the print can not be made so deep in color as could one from a strong negative—a negative which you could leave in the sun for a longer time. It is particularly necessary in the case of the toning and the fixing which again occur here, that you should first have watched an experienced hand do the same work. Leave the prints all night in water. If you have



"It's gwine to go off!"

the opportunity, "mount" them in the morning while they are wet. In case you can not mount them then, they must be thoroughly wet again before they can be mounted. The paste (made from starch) should be like stiff jelly, the water on the paper supplying moisture sufficient to loosen it up.

Do not hesitate to trim down the prints. Very often a figure, group, or other subject is greatly improved by the cutting away of superfluous and uninteresting parts of the picture.

V.—TO PHOTOGRAPH A CITY DRAWING-ROOM.

The diagram on page 300 shows several methods of photographing an ordinary city drawing-room. In making a picture from the points A or B, none of the four windows (1, 2, 3, 4) will require to be covered. If the camera is placed either at C or at E, one window must be covered so as to exclude all light, while the other three do the illuminating. The shades of the windows not covered may be raised or lowered so as to make the shadows agreeable. After a long exposure with the window covered, put on the cap, remove the coverings, and expose again for one or two seconds or less, according to the light coming in and the size of the stop in use. Operating from the point D, two windows must be sealed in the same way. Some black or deep red material is best for

the covering of the windows, as the space they occupy on the plate will then be kept blank until the time comes for printing in the windows. Whether the opening 5 be a door or a window, it can be used as a means of letting in light,

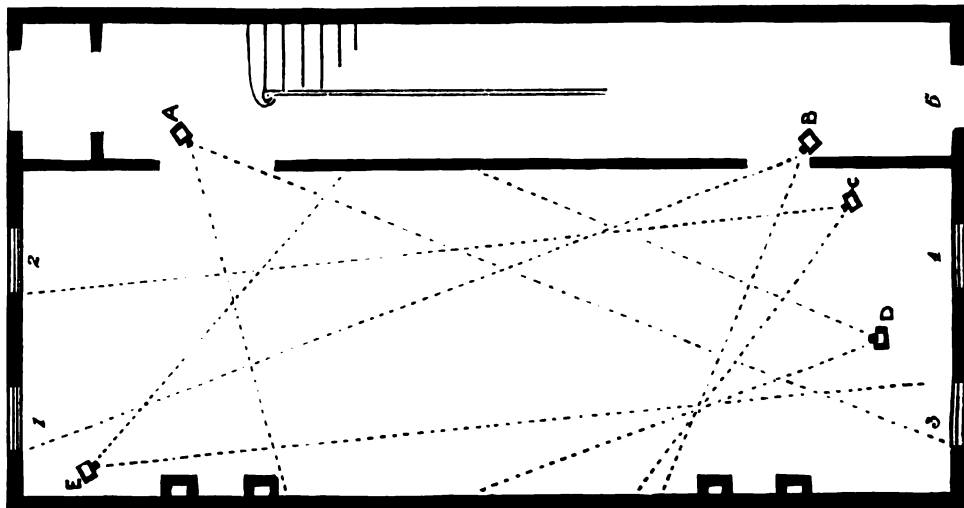


Diagram for photographing a city drawing-room.

which may be reflected through the door-ways by the aid of white material hung at an angle of forty-five degrees. These general principles may be applied to the photographing of any sort of an apartment.

VI.—HOW TO TAKE YOUR OWN PORTRAIT.

The illustration below shows one method of photographing yourself. The camera must be firmly planted, and the box solidly screwed to the tripod, that there may be no jar. By passing the string through the handle of the flat-iron, or something as weighty, on the floor or ground immediately under the camera, the chances of jarring are largely overcome. If you wish to take the entire figure, or to take a group, of which you form a part, pass the string around the leg of the chair on which you sit, or around some other solid object behind or beside you, thence



Now, look pleasant yourself!

through the handle of a second flat-iron (see dotted line) not within range of the lens, to the iron under the camera. The object is, of course, not to have

the string photographed. The separate sketch of the "shutter" will indicate how such a thing may be made. This is a "time" shutter; that is, it is for making exposures when there is not light enough to use the "drop," or instantaneous shutter. The movable center-piece should fit snugly between the outer and inner pieces, and yet should work easily. At the top is a light spring sufficient to bring the shutter gently back as the string is loosened.

VII.—SUGGESTIONS.

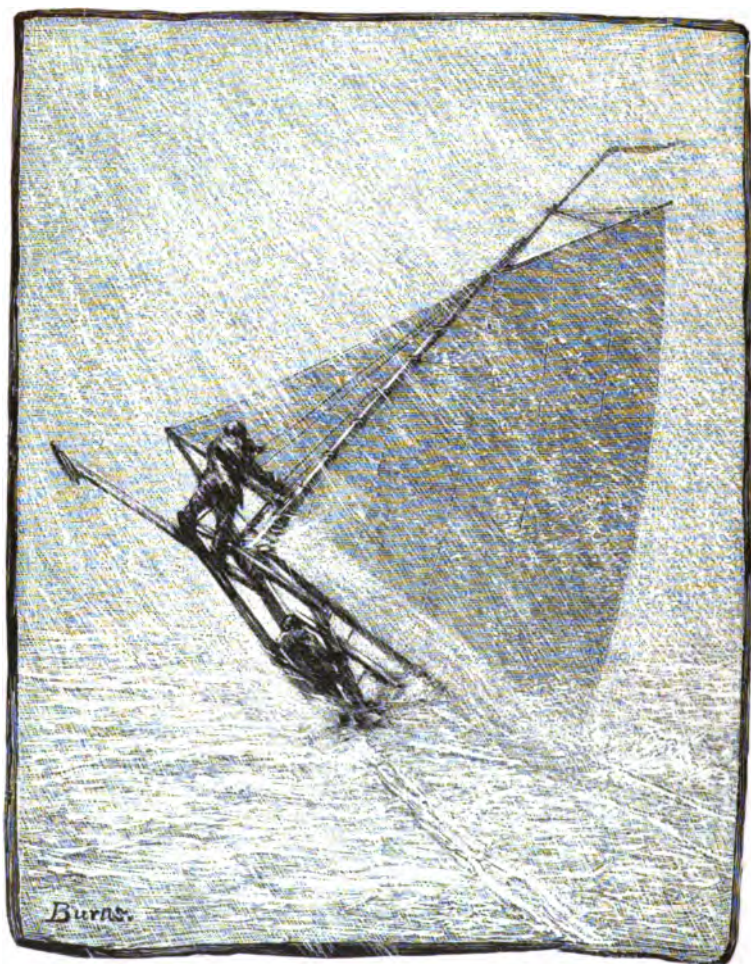
The best suggestion I could offer as to the selection or arrangement of subjects would be to study the illustrations in *The Century*, in *St. Nicholas*, in Art Exhibition Catalogues, or in any well illustrated book or magazine.

To render negatives permanent and easy to handle, it is advisable to varnish them. This may be done by first warming the glass, and then pouring on the varnish until it has flooded the face of the plate. All that will then drip off may be returned to the bottle. Practice this process on some spoiled plates first, as the negative may be ruined by a blunder.

Keep a record of the date, subject, light, and time of exposure in the case of each negative. These entries may be made in a memorandum book, or on the envelopes in which the negatives are filed away, and will be of great value not only in determining what to do on similar occasions, but in recalling the period and circumstances under which the picture was taken.

There are five hundred or more hints I would like to give you, but I am not sure that the time occupied in reading might not be more profitably spent in a struggle with the difficulties themselves.





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WINTER SPORTS.

*"O winter! ruler of th' inverted year,
I crown thee king of intimate delights."*

COWPER.



TOBOGGANS AND THEIR USE.

BY FREDERIC G. MATHER.

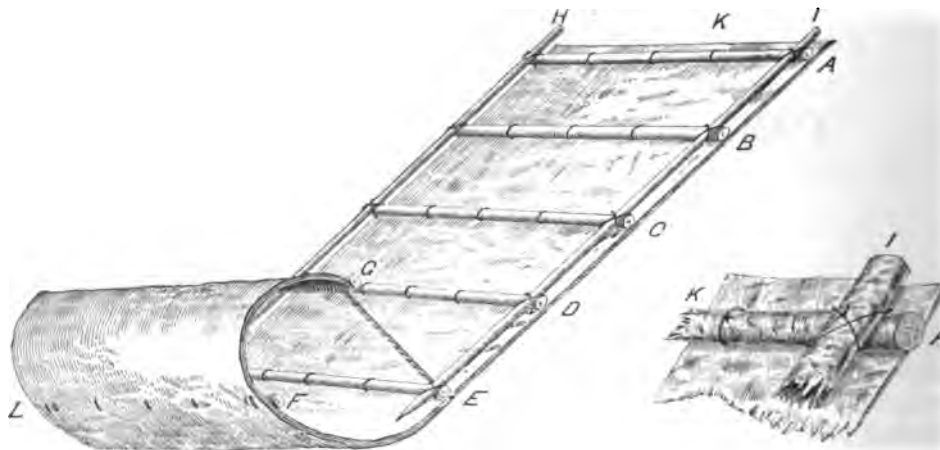
I THINK I can tell the boys how they may enjoy themselves more during the winter months that are to come than they ever did in their lives. You have all of you noticed the sides of a hill when they are covered with snow; and, as you have looked upon the gentle slope and the broad and level meadow beyond, you have thought: "I wish I could slide down that hill and way out over the meadow; it would be *such* fun!"

But you all know that you could not use your sleds for the purpose of sliding down a hill-side where there is no road, because the runners would soon cut through the crust of the snow. Even if you commenced to slide and went part way down such a hill, your sled might be suddenly stopped and you would go rolling

over and over toward the bottom. If you should try to slide down on a board, you would certainly be stopped in this way; and, after picking yourself up, you would feel as I did when I was about six years old and tried to slide down the back stairs on a board. The board stuck upon the edge of one of the stairs and I went on to the bottom without it. Presently the board came down on top of me. This made such a noise that some one came to see what was the matter. My statement was simply this: "I thought I would slide down the stairs." I was warned not to try that again, and never did; and I know that if you ever try to slide down-hill on a board, you will never repeat the experiment.

A board is flat, and will not sink into the snow as deep as the runners of a sled; but then the end is not turned up like the runners. Now, if we could have a combination of the sled and the board, we could slide down the hills and across the meadows. I will describe such a combination of the sled and board and will tell you how you can easily make one. Then, whenever there is a good crust on the snow, you can have more fun in sliding than you ever had before.

What I am about to describe is called a "toboggan." You can only find that word in late editions of the dictionary—for it is the name given to it by the Indians of northern Canada, and has only recently come into general use. The toboggans are loaded with furs, and travel many miles over the snow to the trading-posts. There both furs and toboggans are sold, and the Indians start on their tramp homeward. A great many toboggans are also made for gentle-



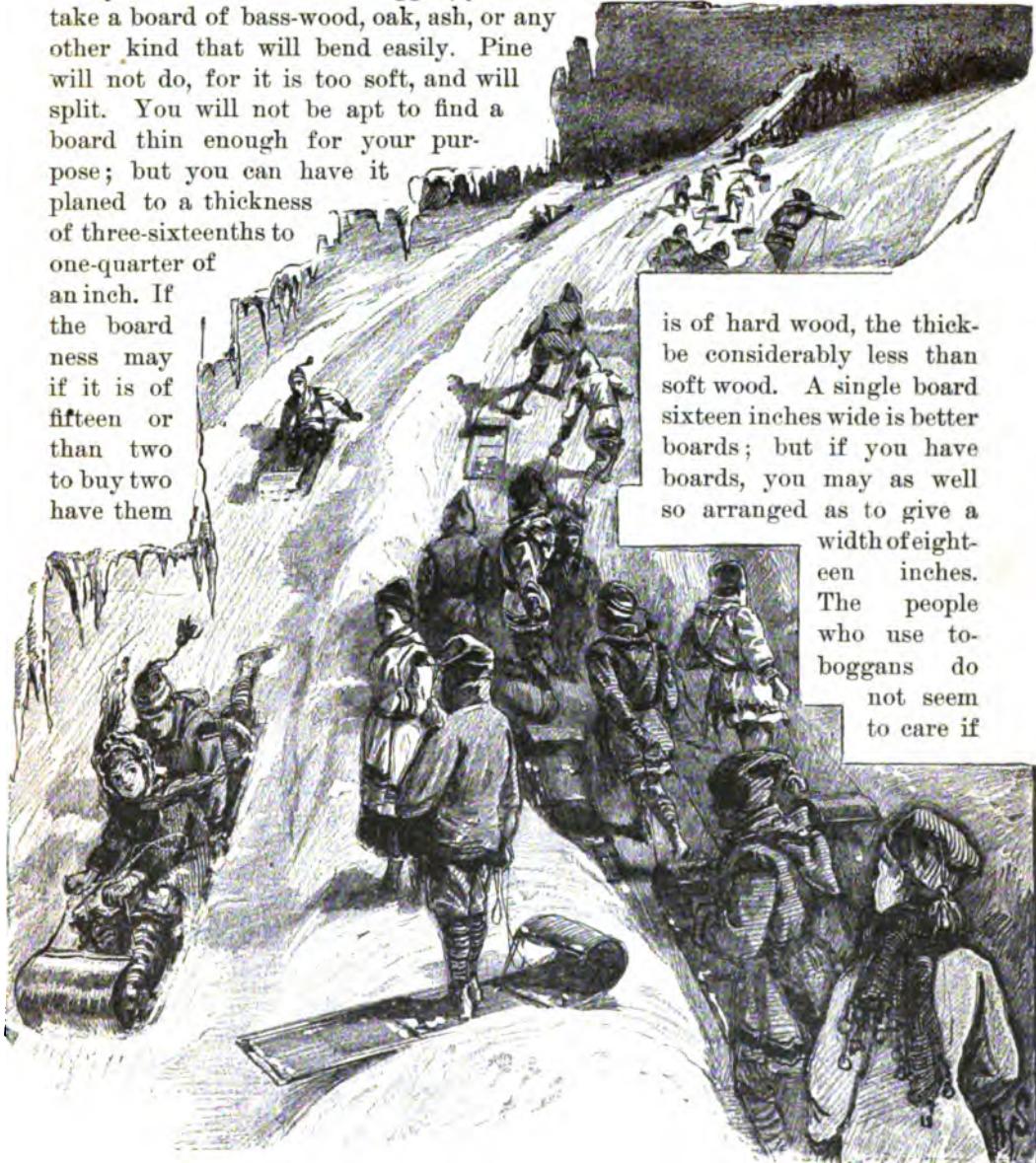
Plan of toboggan.

men and ladies in the large Canadian cities, and it is now quite the fashion to use these queer-looking sleds. There are not very many places in the United States which are as cold as Canada; but we have enough cold weather to have con-

siderable coasting in many parts of our own country—enough, at any rate, to make it worth while to have a toboggan. Indeed, you well know that many places in the Northern United States now have their toboggan “slides” or “shutes.”

If you wish to make a toboggan, you must take a board of bass-wood, oak, ash, or any other kind that will bend easily. Pine will not do, for it is too soft, and will split. You will not be apt to find a board thin enough for your purpose; but you can have it planed to a thickness of three-sixteenths to one-quarter of an inch. If the boardness may if it is of fifteen or than two to buy two have them

is of hard wood, the thickness be considerably less than soft wood. A single board sixteen inches wide is better boards; but if you have boards, you may as well so arranged as to give a width of eighteen inches. The people who use toboggans do not seem to care if



The toboggan slide

the board does split; for they say that the cracks will keep the toboggan from sliding sideways. It is about the same thing whether the single board is split, or two boards are used in the first place; but you will find it much easier to make the toboggan out of a single board. Some of the best toboggans, however, are made of several strips, instead of a single board.

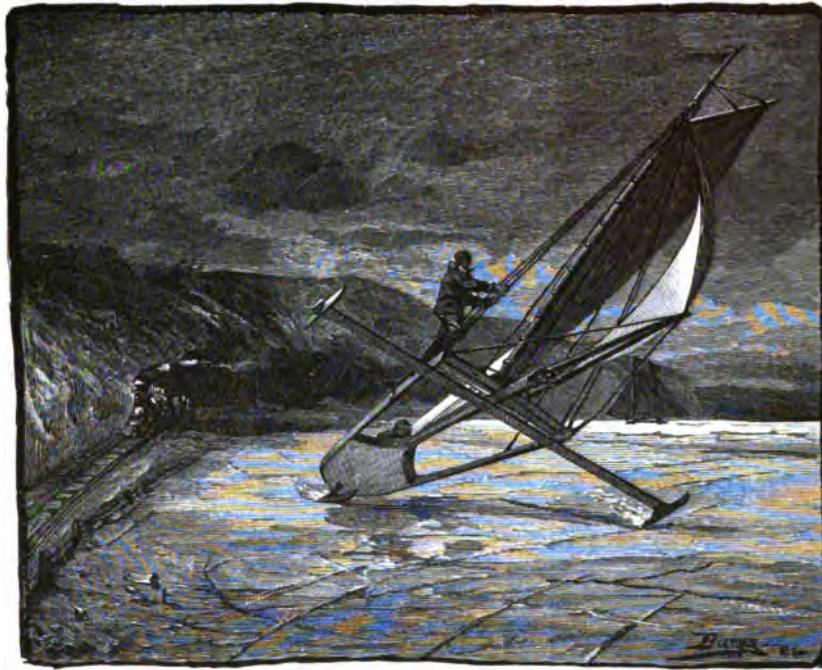
The board should be six feet long. You can have it as much longer as you choose — but I am now telling you about the length of a toboggan that will hold two boys. I have had a ride on one that was long enough to hold six or eight persons.

You will need seven pieces of hard wood, as long as your toboggan is wide; and two pieces, each a little over four feet long. Each of these nine pieces should be one inch square or round. Time will be gained and trouble will be saved if you can have them made round at a lumber-mill.

A visit to the shoemaker is next in order. You must tell him that you want four pairs of leather shoe-strings. He will probably ask you how many pairs of shoes you wear at a time; but then he does not know that you are making a toboggan, and besides that, it is none of his business, at any rate — for this is a free country, and you have a right to wear as many pairs of shoes at a time as you choose.

On page 306 is a plan of the toboggan. After studying it well, you can go to work. Lay six of your round pieces (A, B, C, D, E, F) across the board, beginning at one end. They should be one foot apart. At right angles to these, and near their ends, lay the two long pieces, H and I. Bore four holes in the corner I A (see small cut), and tie both pieces to the board with part of a shoe-string. Make two holes at K, and tie in the same manner. Let the knots always appear on the upper surface, and be sure that the leather which shows on the under side is parallel with the length of the board, as you see it arranged from F to L. The under side will be considerably smoother if you cut grooves to allow the leather strings to sink below the surface; but do not cut the grooves too deep.

In this manner fasten all the braces from A to F; and the pieces I and H as you proceed. These long pieces are to be used as handles while you ride, and they should be sharpened at the end E. Be careful to fasten the brace, G, on the under side as the board lies flat upon the floor of your workshop. You are now ready to bend the end from E to G. If the board is not too thick, you can do it at once; but if there is any trouble, you can use steam or hot water. Having bent it with a graceful curve, fasten with bits of leather the points G and E, and also the corresponding points on the other side, and then your toboggan will be complete. At F and L you can attach a cord, and when sliding you must use a sharp stick for steering this strange craft. If you have bent the end by steaming you can cut the cord after it has held the end for a few days, and the end will keep its place.



Wind against steam.

HOW TO MAKE AN ICE-BOAT.

BY J. H. HUBBARD.

THE sport of sailing on the ice has within recent years attracted considerable attention on our Northern rivers and lakes, and seems likely to increase. It is an amusement well adapted to big boys, being exciting, requiring skill, and certainly not more dangerous than skating. It is even more fascinating than yachting, without the danger which always attends the latter pursuit. A small ice-boat that a boy can build will sail ten to twenty miles an hour with a good wind. Some large ones, strange as it may seem, can sail, with a wind on the beam, actually faster than the wind which is blowing. This fact is attested by the highest scientific authorities.

Having seen some unsuccessful attempts at ice-boats by boys in various places, I propose to tell you how to build one, at a small expense, that will sail well, and give you a great deal of sport.

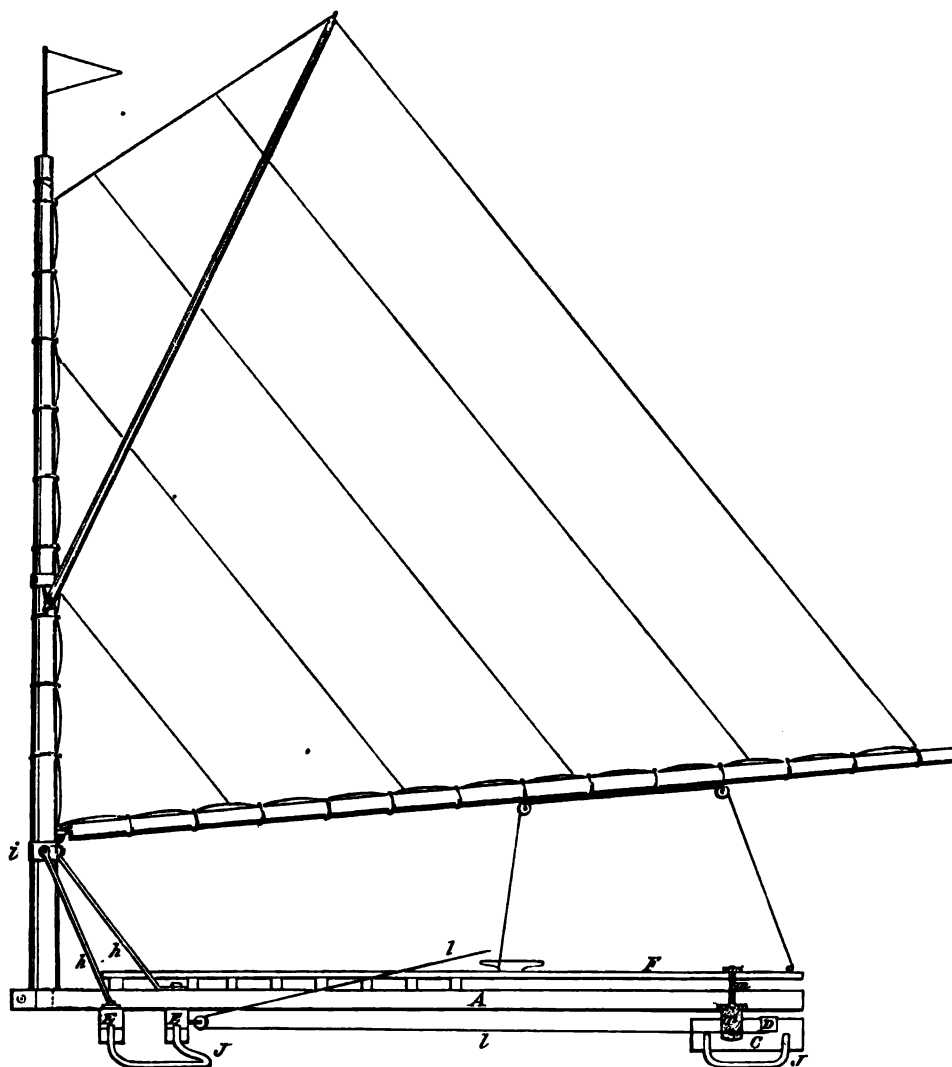


Fig. 1.—Outline of ice-boat.

The directions and measurements are the result of careful experiments and some failures. Fig. 1 is an elevation, Fig. 2 (on page 311) a ground plan of the frame, and Fig. 3 (page 313) a section of a runner. Get a spruce plank, A, 12 feet long, 6 inches wide, 2 inches thick. This is the backbone of the structure. Near one end of it cut a hole two inches square, to receive the foot of the mast.

Take two oak cross-bars, E E, 8 feet long, 4 inches deep, 2 inches thick. The cross-bars are bolted to A, one foot apart, the forward one a foot from mast-hole. This distance is best.

Next get one oak plank, *c*, 16 inches long, $3\frac{1}{2}$ inches deep, 2 inches thick.

The hard-wood piece, *d*, is for tiller, 4 feet long, 2 inches wide, 1 inch thick. This is to be set into the top of plank *c*, and fastened there with screws. To each end of it is attached a rope, which runs over a sheave fastened to the cross-bar, *c d*, and the ropes *l l*, constitute the steering apparatus. Two boards, *F F*, each 11 feet long, 8 inches wide, $\frac{7}{8}$ -inch thick, are planed, and the edges matched together at the stern. They are nailed to the plank, *A*, and the cross-bar, *E E*, as shown in Fig. 2. Four blocks, each 3 inches thick, must be put under them where they lie over the cross-bars. A board a foot long, $\frac{7}{8}$ -inch thick, must also be put under *F F* at the stern.

Six slats, *G G*, as long as may be needed, 2 inches wide, $\frac{7}{8}$ -inch thick, are nailed over *A*, and under *F F*.

The mast is a natural spruce stick, 13 feet long, shaved down to $3\frac{1}{2}$ inches at butt, $2\frac{1}{2}$ inches at the top.

The boom is $13\frac{1}{2}$ feet long, two inches thick at each end, and a little thicker in the middle. It is fastened to the mast by an iron eye, screwed into the mast

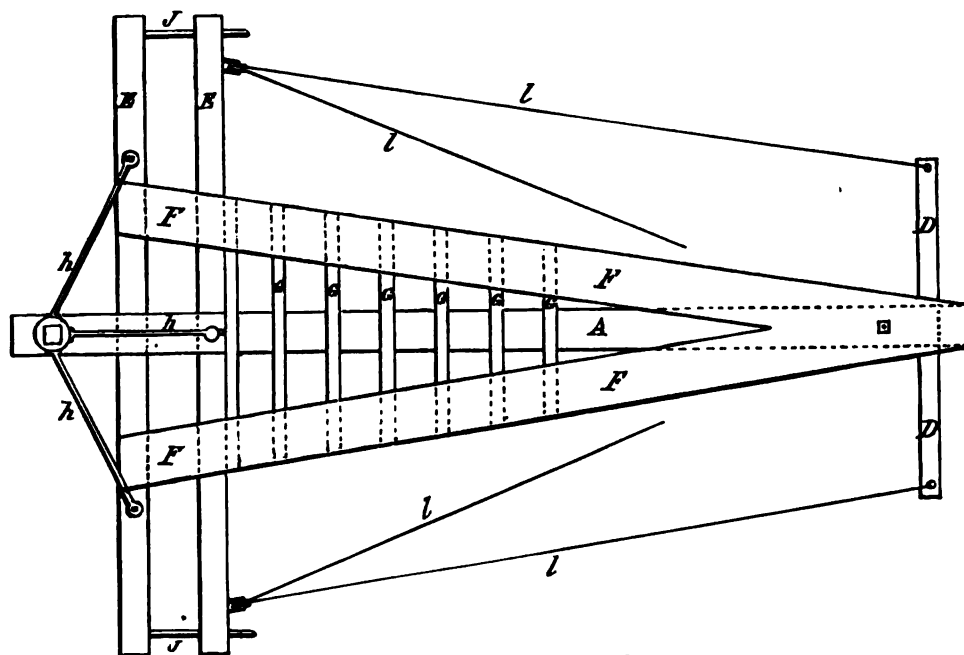


Fig. 2.—Ground plan of ice-boat frame.

and a hook in the end of the boom. The sprit is 10 feet long, $1\frac{1}{2}$ inches diameter, shaved to $\frac{3}{4}$ -inch for 2 inches at each end.

The iron collar, *i*, through which the mast is inserted loosely, stands two feet above the top of plank, *A*. It is supported by three iron braces, *h h h*, and is

bolted to the tops of these braces, which are of $\frac{3}{4}$ -inch round iron, bolted to the frame as shown.

The hind-runner block, *c*, is fastened to *A* by a strong iron, *m*, as shown in Fig. 1. It allows the runner to rock up and down, and to be turned sidewise by the tiller. *A* must be plated with iron top and bottom where *m* goes through, that the runner may not "wobble."

The construction of the runners, *J J J*, must be attended to with the greatest care, as upon these, in a great measure, will depend the success of your boat. Get a square bar of cast steel, 6 feet long, cut off 22 inches for third runner, and divide the rest in halves, across. Shape two forward runners and one hind one as shown in Fig. 1. The bearing surface is a right-angled edge, as shown in



Taken in tow.

Fig. 3. This sharp edge holds the ice firmly without much friction. Holes are bored two inches up into the cross-bars, near their ends, and the runners driven in and fastened with rivets. After the runners are forged, they should be finished with a file and emery paper if not perfectly smooth. The front turn must be long and gradual, like a skate, two-thirds the length, however, flat on the ice. The running edges should not be too sharp. They will project $2\frac{1}{2}$ or three inches below the bottom of the wood.

For the sail, get twenty yards of heavy drilling, three-quarters of a yard wide. The dimensions are: Head, 5 feet; foot, 13 feet; foreleach, 10 feet; afterleach, 14½ feet. Make these measurements on a floor, and mark the outlines with a chalk-line. Cut the after-breadth first, and the others to match. Lap the breadths 1 inch. Allow an inch all around for a hem. The breadths should be basted before stitching. Put two rows of stitching where the breadths lap. Look out for puckering. Put a narrow hem clear around the sail. Then stitch a ⅝-inch rope around the hem. Make a loop at the peak, to put the end of sprit into. Draw the rope tight along the boom, and fasten it through a hole in the end. Fasten the throat of sail tight to the top of the mast. Cut a number of short pieces of heavy twine, and lace the sail, at intervals of a foot, to the boom and mast. Fasten a becket, or loop of rope, at a suitable position on the mast, to set the heel of the sprit into. Rig main-sheet over two sheaves, as shown; it brings less strain on the boom, and clears the skipper's head in tacking. Make a good large wooden cleat, to belay it to.

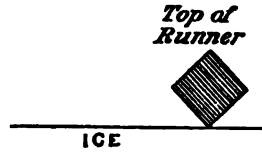
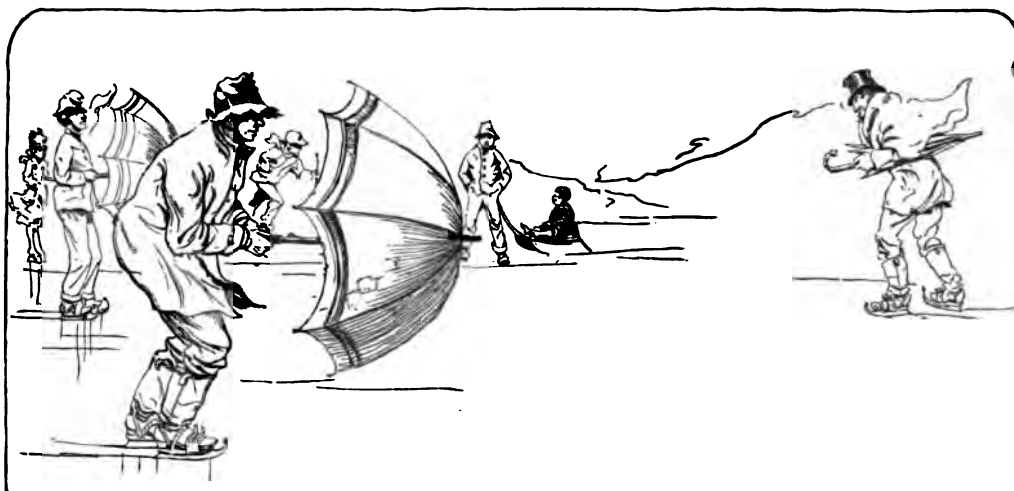


Fig. 3.—Section of runner.

The cost of materials will be about as follows:

Boards, plank and mast	\$5.00
Iron-work	6.00
Twenty yards drilling	2.75
Four single-sheaved galvanized pulley-blocks at 35c	1.40
(May be omitted by using leather straps.)	
Ropes, etc.	85
Total.....	\$16.00

A boat built as above will sail nearly as close to the wind as a good cat-boat. It is managed much the same. Don't turn too short in coming about. Jibe when you like, without fear of capsizing. Your boat will carry three persons in a light wind,—more if it blows fresh. Rig it neatly, and try to make a finished thing all through. Your ice-boat will then be more than a boy's play-thing, and will be admired by old and young.



EVERY BOY HIS OWN ICE-BOAT.

BY CHARLES L. NORTON.

VERY few skaters have not, now and then, to a moderate extent, made ice-boats of themselves by standing up straight, with their backs to the wind, and allowing themselves to be blown along before it. Coats, held wide open, umbrellas, shawls, and the like, have been used to gain greater speed; but, after all was done, there remained the long pull back against the wind — no laughing matter, with the thermometer in the twenties, or lower, and a howling north-wester sending the loose snow in stinging sheets along the ice. There was so much fun, however, in running down before the gale, that boys have always made light of working to the windward. Why in the world it did not sooner occur to some ingenious lad that he could turn himself into an efficient ice-boat, is one of those things that can not be explained; but certain it is that until quite recently the world at large did not know that Canadians were in the habit of rigging themselves with spars and canvas, sailing "close-hauled," "running free," having themselves "taken aback," "missing stays," being struck by squalls, and, in short, going through no end of fascinating maneuvers, with the aid of wind, and without danger of a ducking in case of an upset.

The name of the inventor of skate-sailing has not been announced, but his plan was the simple one of stretching an oblong sail on a light frame, and holding it by means of a spar reaching from end to end. With this, it is possible to do everything that an ice-boat can be expected to do. But the crew works

at a disadvantage: the steersman can see only one-half as much as he ought to see, and of course stands in constant danger of collision. To lift or lower the sail, so as to see if the way is clear, is a somewhat awkward operation.

Another difficulty with this form of sail is that its spars must be somewhat heavy, in order to bear the strain of sufficient bracing, as there is a tendency on the part of the sail to twist and make a complete wreck of itself and crew. The latest improvement does away effectually with both these imperfections, and seems to provide a nearly perfect device for skate-sailing.

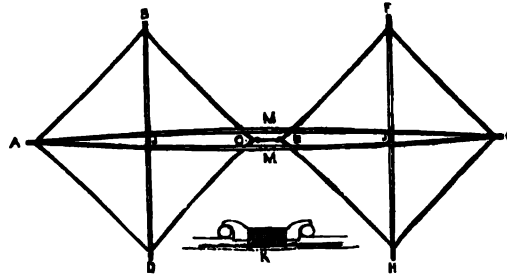
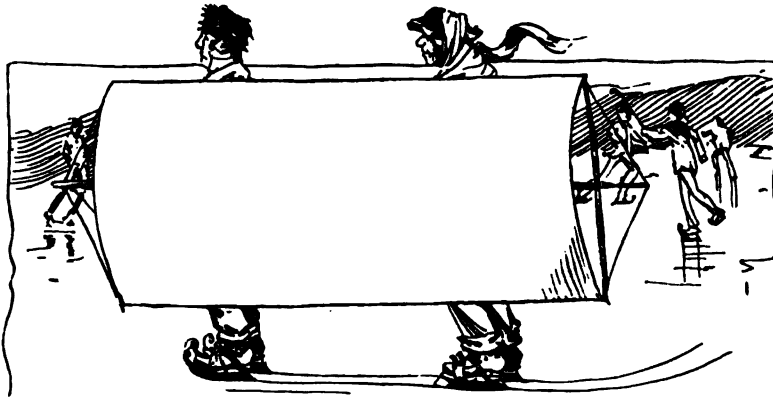


Diagram of new skate-sail.

In the first place, the sail is divided into foresail and mainsail, so that the crew has his whole course in plain sight between the two. Secondly, the main spar is made double, so that it affords two points of support for each of the "yards" or cross-pieces, and renders the whole affair so strong that comparatively light spars may be used. In the diagram given above, A G is the main spar, from eight to twelve feet long, according to the size and strength of the crew. It is made of bamboo, or some light native wood like spruce or pine. The pieces should not be less than an inch and a half in diameter in the middle. They may be tapered toward the ends, but one side of each should be left flat.



The old style of skate-sailing.

Each piece, in short, is shaped like an archer's bow, much lengthened. The flat sides are laid together, and the ends at A and G are lashed firmly with strong twine. In or near each end, at A and G, is set a button to hold the clew — corner, that is — of the sail.

The most perfect spar yet devised is made of four pieces of bamboo, with brass fishing-rod ferrules at the butts, fitting into one another at *M*. Brass tips hold the smaller ends of the bamboos together at *A* and *G*. The butts join at the middle of the spar, which can thus be taken to pieces and easily carried.

The sails are made from the heaviest cotton sheeting — unbleached is best. Tack the material smoothly on the floor, and mark out the sails, making ample allowance for heavy hems. Stitch stout tape all around where the edges are to be, and have the hem as strong as possible, especially at the corners, sewing through the tape and several thicknesses of the sheeting. If the sails are to keep their shape, the tape is indispensable. Stout laid cord (cotton or hemp), sewn around the edges and forming small loops at the clews, makes a desirable finish, but is not absolutely necessary. Instead, small brass or galvanized rings may be sewn to the clews. These rings must be large enough to catch easily on the pins or knobs in the spar-ends.

The sails may range in size from three to five feet square, according to the size, strength, and weight of the skater. It is not difficult to arrange them for reefing, but they are so easily adjustable to the wind without reefing, that this is hardly necessary.

The cross-yards are quite light. Bamboo, five-eighths of an inch thick at the smaller end, is probably heavy enough for the largest practicable sail. They must be made three or four inches longer than the diagonal of the sail. Near the ends of the yards are buttons similar to those on the spar. To the middle of each yard is firmly lashed a cleat, from three to five inches long (*K*, in diagram on page 315), whose ends are shaped so as to receive and hold the two pieces of the main spar when they are sprung apart.

Two opposite clews of the sail are now hooked over the buttons at the ends of the yard, the main spar is sprung apart until the cleat can be inserted and held at right angles between its pieces, as at *J*. The yard is pushed along until the clew of the sail can be hooked over the button at the spar-end. The other sail is then put in position similarly at the other end of the spar, and the two remaining clews, at *C* and *E*, are strained together with a strap or cord as tightly as the material will permit. The whole affair is exceedingly light, strong, and elastic, and will stand any reasonable strain.

Such is the rig. Now the question is how to manage it. This is a far less complicated matter than in the case of a sail-boat, although the principle is the same. If you are caught by a squall, all you have to do is to let go of everything, and your sails will fall flat on the ice and await your pleasure.

In running before the wind, all you have to do is to hold the spar across the course of the wind, steer with your feet, and go as fast as the wind does. You can vary your course at will considerably to the right or left without altering the position of the sail.

When your course is nearly at right angles to that of the wind, or against it, you will naturally take the spar under one or the other arm, and point the foresail more or less in the direction from which the wind comes.

Let us call this second diagram a pond, with the wind blowing from top to bottom. In this diagram, the black spots represent the skater, the arrows the

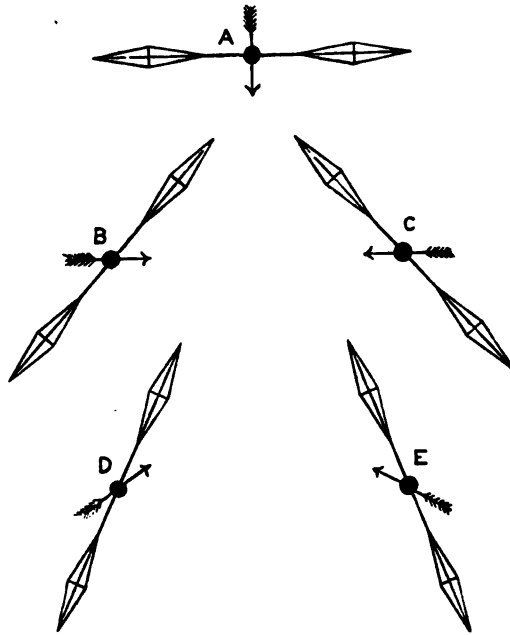


Diagram for tacking.

direction in which he sails under different conditions, and the long line, etc., the spar and sails. In his first course down the middle of the pond, he grasps the spar by the middle, or holds it under his arms behind him. Squaring away with his back to the wind, as at A, he sails before it to the lower end of the pond, moving his feet only for the purpose of steering. In order to make the wind take him back to his starting-point, he turns his sails at an acute angle to the course of the wind, as at B, C, D, and E, instead of across it as at A. If pointed nearly as at B or C, it will carry him directly across the pond. If as at D and E, it will carry him more or less up the pond, as indicated by the arrows. When he reaches the shore on one tack, — say that represented by E, — he

“goes about,” that is, changes the direction of his sails so that they point as at D. The wind will now carry him on a slant to the opposite shore, which he will reach at a point still nearer the head of the pond. Thus, by zigzagging from one side to the other, now on one tack and now on the other, he may work his way to windward.

Experiment alone can show each individual how best to trim his sails, whether to carry his spar under his windward or leeward arm, or before or behind him. Tastes differ in all these particulars. So, in going about,—changing, that is, from one tack to the other,—each must adopt the method which he personally finds most convenient. One, perhaps, will pass the spar over his head; another will let the foresail fall off to leeward, and bring up the mainsail on the other side, so that it will in turn become the foresail. In all these particulars, each must be a law unto himself; but in regard to avoiding collisions, it is plainly necessary to have a general understanding, and the rules of the Hudson River Ice-Boat Club, adapted to skate-sailing, are perhaps the best.

RULES FOR SKATE-SAILING.

I. Skate-sailers on the port tack must give way to those on the starboard tack.

II. When skate-sailers are moving side by side or nearly so, on the same tack, those to windward must give way to those to leeward when requested to do so, if there is an obstacle in the course of the leewardmost. But the leeward skate-sailer must go about or change his course at the same time as the windward skate-sailer, or as soon as he can without coming into collision. The new direction must be kept, at least until the obstacle has been cleared.

III. When skate-sailers are moving side by side, as in Rule II., and approaching a windward obstacle, the leewardmost must give way when requested to do so. But the windwardmost must change his course at the same time as the leewardmost, or as soon as he can do so without coming into collision, and the new direction must be kept, at least until the obstacle has been cleared.

IV. When skate-sailers are running free, it rests with the rearmost ones to avoid collision.

V. Skate-sailers running free must always give way to those on either tack.

VI. Skate-sailers who violate any of the foregoing rules in the course of a race shall forfeit all claim to the victory.

VII. A touch, whether of person or of rig, constitutes a collision, either with another skate-sailer or with a mark or buoy, and he who is responsible for it, under the rules, forfeits all claim to the victory.

VIII. No means of locomotion other than that afforded by the wind is permissible during a race.

For the benefit of those who are not familiar with sea-terms, it should be stated that "running free" means sailing before, or nearly before, the wind. "Close-hauled," or "on the wind," means sailing sharply across its course. When the skater's right side is presented to the wind, he is on the starboard tack; when his left side is presented to the wind, he is on the port tack.

The possibility of using the sail on an ordinary coasting-sled will naturally occur to every skater. This can be accomplished with the aid of a few additional fixtures. A regular ice-boat has three runners, two in front and one in the rear. The latter is pivoted, so that it can be turned from side to side like the rudder of a boat, and used in like manner for steering. The first thing to be done with a sled is to provide it with sharp shoes, which will not slip over the ice sidewise. A pair of skates, or skate-blades, fastened one to each runner, near the bend, are as good as anything. The fitting of the after-runner is a more complicated affair, if fastened to the sled, and it is not worth while to give directions for it here. The simplest way is to let the after part of the sled rest on its own proper runners, and depend on the feet for steering, or use a stout



A fleet under sail.

stick shod with iron. A blade-shaped iron is best, as it presents an edge to the ice.

It is possible to kneel on the sled and hold the sail under the arm, but a mast about three feet high, stepped at the side of the sled, is better. If but one mast is carried, it must be arranged so that it can be readily shifted from one side to the other. The head of the mast is crotched, to receive the upper spar; or a hook, large enough to hold it, is inserted an inch or two below the mast-head. The lower spar rests against the mast, and is held there by the crew with one of his hands. A crew of two, on a long sled of the so-called "pig-sticker" variety, can do pretty work, one tending the sail and the other steering; but a crew of one will think that he needs at least two extra pairs of hands, until he gets the knack of the thing.

It is suggested that more sail can be carried by a single skater if his yard-arms are shod with light metal disks, so that they can be allowed to rest on the ice and act as runners. So far as known, this has not been actually tried. It looks promising, but will necessitate rather heavier yards.

FISH-SPEARING THROUGH THE ICE.

BY J. O. ROORBACH.

ABOUT thirty years ago, I was stranded by the severe winter weather, which put a stop to navigation, at the old army station of Green Bay, now a flourishing city in the great State of Wisconsin, at the mouth of the Fox River,—at the south-western extremity of a long arm of Lake Michigan. Society in that far-off army post, though cut off by the long winter from the outside world, was very delightful in those days, and the good times I had, both indoors and out, during those snow-bound months, I have never forgotten.

But what I wish especially to describe for the boy readers is a curious Indian custom that I discovered in the course of my winter rambles. I had frequently noticed, while booming along the ice road on Fox River behind one of the fast little French ponies, a curious lot of black dots on the ice, in the retired nooks and coves along the farther shore. "What are they?" I asked; and the invariable reply was: "They are Indians fishing." This puzzled me still more, and I resolved to investigate. So one day I crossed the frozen river, and, approaching one of those mysterious black dots, found it to be apparently only a bundle in a blanket, scarcely large enough to contain a human form. But, looking closer, I could see, first from one bundle and then from another, the quick motion of a pole, or spear-handle, bobbing up and down. A word, a touch, even a gentle push, only called out a grunt in reply; but at last one bundle did stretch itself into a bright young Indian brave with wondering and wonderful eyes peering at me from under a mop of black and glossy hair. A little tobacco, a little pantomime, and a little broken English succeeded in making him understand that I wished to know how he carried on his fishing under that funny-looking heap.

Then I saw it all. Seated, Turk-fashion, on the border of his blanket, which he could thus draw up so as to entirely envelop himself in it, he was completely in the dark, so far as the daylight is concerned; and, thus enshrouded, he was



Indians spear-fishing for pickerel at the mouth of the Fox River, Wisconsin.

hovering above a round hole in the ice, about eighteen inches in diameter. A small tripod of birch sticks erected over the hole helped to hold up the blanket and steady a spear, which, with a delicate handle nine or ten feet long, was held in the right hand, the tines resting on the edge of the hole, and the end of the pole sticking through an opening in the blanket above. From the other hand, dropped into the water a string, on the end of which was a rude wooden decoy-fish, small enough to represent bait to the unsuspecting perch or pickerel who



should spy it. This decoy was loaded so as to sink slowly, and was so moved and maneuvered as to imitate the motions of a living fish.

Crawling under the blanket with my Indian friend, I was surprised at the distinctness and beauty with which everything could be seen by the subdued light that came up through the ice. The bottom of the river, six or eight feet below us, was clearly visible, and seemed barely four feet away. The grasses, vegetable growths, and spots of pebbly bottom formed curious little vistas and recesses, in some of which dreamily floated a school of perch and smaller fish. Each little air-bubble sparkled like a gem, and the eye delighted in tracing and watching the mystery of beautiful water formations, where every crevice seemed a little fairy world, with changing lights or shadows made by the sunlight through the transparent ice.

The wooden decoy-fish, meanwhile, was being delicately handled by the Indian fisherman, now raised gently to the top of the water, then sinking slowly. The very action of sinking and the position of its artificial fins made it run forward, now this way, now that, until it really seemed alive.

Suddenly, from somewhere, I could not tell where,—it seemed to come by magic,—a large "dory," or "moon-eyed pike," appeared on the river-bottom. The watchful Indian slowly raised the decoy-bait toward the surface, the larger fish following it with interested and puzzled eyes. There was a sudden movement of the spear; down it darted; its sharp prongs pierced the unsuspecting pike, which was speedily drawn up and thrown wriggling on the ice. Then the blanket was re-adjusted, and the fishing was resumed. My bright young Indian friend said he could catch from twenty to thirty pounds of fish in an afternoon in this manner, and sometimes could even secure double that quantity.

So ingenious and exciting a method of fishing interested me greatly, and when, years after, I again visited Green Bay, with two bright boys and zealous fishermen of my own, we, with some other wide-awake young fellows, adapted the Indian method of fishing—which was somewhat too rough to be literally followed—to suit the abilities and ingenuities of civilized American lads. Since then the two boys have put our experiment into practical use on some of the best-known pickerel ponds of New Jersey, and at one time they came out ahead in a fishing-match against two men with several set lines each.

For such boys, therefore, as have interest or opportunity for such sport, I will describe this mode of fishing, in detail.

In the first place, we built a house or shelter,—a grand improvement upon the Indian blanket,—making it possible for the sport to be comfortable, as well as exciting and interesting. This shelter, which can be made of any convenient boards from an inch to an inch and a half thick, was about four feet high, four feet long, and three feet wide at the bottom, and two feet long and eighteen inches wide at the top. The front only of the shelter was perpendicular, which caused the other three sides to slant. We left a four-inch square hole in the

top, which was level, about three inches from the slanting end, so that the spear, which passed through it, would come about over the center of the bottom. To cover this hole we used a block one foot square, with a three-inch hole in the middle. To exclude light from around the spear, we tacked a cloth funnel to the outer edges of the block, firmly fastening it with inch square strips nailed on. This funnel was long enough to exclude the light by rumpling or wrinkling around the

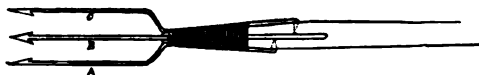


Fig. 1.—Diagram of the spear.

pole, while the opening was loose enough to admit of free and vigorous action. The illustration on page 324 affords the best description of the house, which can, of course, be modified to suit the tastes or convenience of any one who may choose to build a little structure of the kind. One of my friends uses a six-foot-square house with a floor, a seat, and a small charcoal stove; he can thus enjoy a change of position, his pipe, or book, at leisure, at such times as the fish are not running. The best time for the sport is just before and just after sunset.

Of course, no floor is necessary, and any block or bit of board which raises the sportsman a few inches from the ice would serve for a seat.

I must add, by way of caution, that every hole or crack in the box should be covered; as a direct ray of light not only obstructs the vision, but prevents fish from coming to the hole. Any opening that may be discovered after setting up the box on the ice can be closed with a handful of snow.

The tines of the spears which we used were made of quarter-inch, round iron; and for fish weighing two or three pounds, three-sixteenths or one-eighth iron will answer. I have caught four and five pound pickerel on a spear of one-eighth inch iron, with tines four inches long. If quarter-inch iron is used, the tines should be six inches long; if one-eighth inch, four inches will be long enough. Any blacksmith can make these tines with barbs as shown in the diagram above (Fig. 1). We had the tines pointed and bent at the upper end, so as to be driven into the handle, as shown by the dotted lines.



Fig. 2.

Diagrams of the artificial bait.

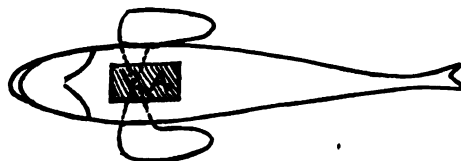


Fig. 3.

Our spear-handles were made from straight pine or spruce shingle laths about one and a quarter inches wide, tapering from the thickness of the lath at one end, to three-fourths of an inch at the other. They may be from nine to twelve feet in length — but a good average is ten feet.



Boy spearkers on a New Jersey
pickerel pond.

The handle should be grooved so that the tines may be sunk at least half-way into it, to prevent slipping or twisting. They should be lashed very tightly and carefully to the pole with stove-pipe wire or any other malleable wire.

The artificial bait or minnow, of which two outline figures are given on page 323, we whittled out of pine. They were three or four inches long, and in proportions as drawn. In the side-view (Fig. 2), the dotted and shaded part, A, shows the shape and proportion of a hollow, opening from below, to be run full of melted lead; we made this hollow larger at the top, so that the lead would not drop out, and poured in enough lead to sink the minnow rapidly. After cutting out the hole, and before running in the lead, we drove in the side-fins, which we cut from bits of tin with a pair of strong scissors. The dotted lines



in Fig. 3 show how these fins met in the center of the space which held the lead. The lead thus held the fins, and the fins kept the lead more securely in place. The back-fin, C, was also cut from tin and driven into a slit made with a knife along the back. A bent pin made the small staple, B, which was set over the center of the lead and just ahead of the back fin. We definitely settled the position of the staple by tying a fine fish-line to it and experimenting in a pail of water. When the fish hung perfectly level, the staple was in the proper position. By pulling the string, the resistance of the water on the side-fins caused the fish to shoot ahead; and on slacking the thread, it also shot ahead while sinking; in this way, by giving the thread little short jerks and alternately lifting and lowering, we made our decoy-bait to play about in very fish-like motions. The minnows may be painted white, with the back a dark greenish gray.

The bait should be raised and lowered a few inches, by little half-inch jerks, but only for a few minutes at a time; every once in a while, it may be raised quickly nearly to the top of the hole. Here it should be made to swim and glide about, in whatever way it will, while sinking to a depth of three or four feet. Then it should be guided in a circle around the outer limit as far as can be seen, then returned to the center, about three or four feet down; and again, kept almost still. Now, when the fish appears, gradually lift the bait with one hand, and with the other take the spear, and poise it over the fish, letting it gently slide through the hand and approach the fisherman, while he attracts his intended victim with the motions of the bait.

When the spear is about eighteen inches or a foot from the fish's back, being careful to keep the hand raised, the boy should strike it suddenly and he will be apt to catch. A few failures must be expected, at first.

If a lad feel nervous and uncertain, and can not use both hands as described, let him throw the line over the left knee so as to hold the minnow just over the fish, which will probably remain long enough for him to lower the spear gently with both hands and to strike with certainty.

During a snow-storm or on a partly cloudy day, or just before and after sunset, are the best times for successful sport.

It will not be difficult to see; for, if the box shuts out all outside light, it will be beautifully transparent and clear below, even until late in the evening. If the ice is covered with snow, it should be cleared away for a space.

A thick overcoat should be worn, although the animal heat in the box will make the spearman warm enough, and sometimes too warm. I have fished comfortably when the thermometer was ten degrees below zero.

The door of the house should be on the left hand of the spearman, who should sit with his back to the perpendicular end. When he catches a fish he unbuttons the door, pokes the fish outside, pulls the spear in, and resumes fishing.

This fish-spearling can be combined with a day's skating and other amusements, and will give many a boy a good day's sport which he will long remember.



"When we were boys —"

OUTDOOR SKETCHES.

"Who would not be a boy?"

BYRON.

HUNTING JACK-RABBITS.

BY A BOY.



OUT in Kansas, we have rare sport hunting jack-rabbits. Eastern boys can hardly guess how much excitement there is in it. We have other game, of course. Deer and antelopes are quite common in Edwards and other south-western counties; and the wolves that prowl over the prairies are worse for our sheep and calves than bears are, or ever were, in New England.

But the greatest sport of all is hunting jack-rabbits. We hunt them on horse-back, with greyhounds. All the settlers in our section keep one or more greyhounds on purpose to hunt jack-rabbits. I went fox-hunting twice, with hounds, in Maine,* and did not have half the fun that I have had out here, in Kansas, hunting "jacks."

Our jack-rabbit, I should say, is no such little scrub as the Massachusetts rabbit, or even the Maine hare. Jack is quite a beast, and makes, roast or stewed, a pretty good dish. Many a settler's family lived on jacks, after the grasshoppers came. Our rabbit has black legs and black ears, and a blackish head. When he stands up on his haunches, for a look around, he is nearly three feet tall. His tail is long, and that is black, too. But the body is a brownish gray. I have seen jacks almost as large as a small goat. Now and then one comes across a tremendously large one,— so big and tall and long-eared, and so awfully clumsy-looking, as fairly to make a fellow stare, even when he is used to jacks. Generally, however, they do not weigh more than fifteen or twenty pounds.

* The narrator emigrated to Kansas from Maine when fifteen years old.

These jack-rabbits live right out on the open prairie and along the shallow river-valleys, where there is not a bush nor a tree anywhere in sight. Most of the grass, except by the streams, is buffalo-grass,—a short, curly, fine grass; but scattered about are seen bunches, or rings, of taller grass, two and a half or three feet high. These rings of high grass are commonly not larger across than a bushel-basket, but quite thick. And right inside of the grass rings is where the jacks hide. They hide in there, curled up, cuddled warm out of the prairie wind, and well out of sight, too. You scarcely ever see a jack stirring on the prairie in the daytime, even in places where they are really very numerous. Those grass bunches are so thick that you may pass close to one and not see the jack cuddled up in the middle of it; and if he sees you, he will not stir, unless you kick or strike into the grass. Then out he goes, ten feet at one jump; and, clumsy as he looks, there is nothing that runs which can catch him, if he gets twenty yards start,—not even a greyhound. Away he flies, like an old felt hat flopping along the ground before the wind; and you think that the hound will catch him in no time; but he does n't. Jack keeps just about two jumps ahead, and will run one mile, or two, or all day, just as you like. There is no such thing as tiring one down, when once he has had a good fair start, and has had a chance to get his eyes fairly open and catch his wind. The only way we ever catch jack-rabbits with hounds is to take them by surprise, before they have time to lay themselves out for good steady leaping.

I have often laughed to see a wolf hunt jack-rabbits. The wolf will sneak along, crouched close to the ground, and work up to a ring of grass, then give a sudden jump right into the midst of it. About one time in fifty he will manage to seize the sleeping jack. But commonly the rabbit will, in some mysterious way, leap out from under the wolf's very nose, and go twenty or thirty feet, as if propelled by a single kick, then stop and look. The wolf knows that the game is up. I once saw a wolf sit down and look hard at a rabbit, and sniff him longingly; and the jack, not yet half awake, sat and winked. But the wolf turned away and went to another bunch of grass. He knew better than to waste his strength chasing a jack-rabbit.

The way we used to hunt jacks was to start out—eight or ten of us—on our ponies (and there are no horses in this country fleetier than some of those Texas ponies), with all the greyhounds we could muster,—sometimes fifteen or twenty of them. Riding out on the prairie, we would now string out in a line, with the dogs all running close beside the ponies, and go at a gallop for those rings of tall grass. Just as some pony's forefeet were going into a bunch of tall grass, out would leap a rabbit. The greyhounds would be at close hauls, not two yards from the rabbit's tail; and everybody knows how a greyhound will buckle down to the ground and run, without so much as a *yip*. The jack, waked up so suddenly, would not have time to straighten out for long leaps, and would tack, first right, then left. In that way he would dodge one hound, but in dodging

one, another would grab him. That was the way we used to hunt them. Sometimes we would by this plan catch eighteen or twenty in an hour. Oh, it was live sport! Such shouting and cheering on! Three or four jacks going at once, and all crazy after them, at a dead run! The ponies would chase as eagerly as the greyhounds. Why, I have seen more excitement and more downright, laughable fun in a jack-rabbit hunt than in anything else I ever witnessed.



"Out would leap a rabbit."

But it is not the safest business in the world—riding at full spring and at a venture across the prairie; for, one is always liable to run into a "buffalo-wallow" or break through into some old burrow. Our Texas ponies were pretty sure-footed little fellows; but, of course, if a horse broke into a deep hole he would go down in a heap, and his rider would go headlong on the ground. I once got a tremendous "fore-reacher" of this sort. And here I should explain, perhaps, that a "buffalo-wallow" is not a slough, nor a pig-mire, but just a dry hole where a bison has got down and dug with his horns, and rolled and plowed himself into the dirt, either to get rid of flies or vermin, or else, perhaps, from some desire to get the fresh earth into his hair.

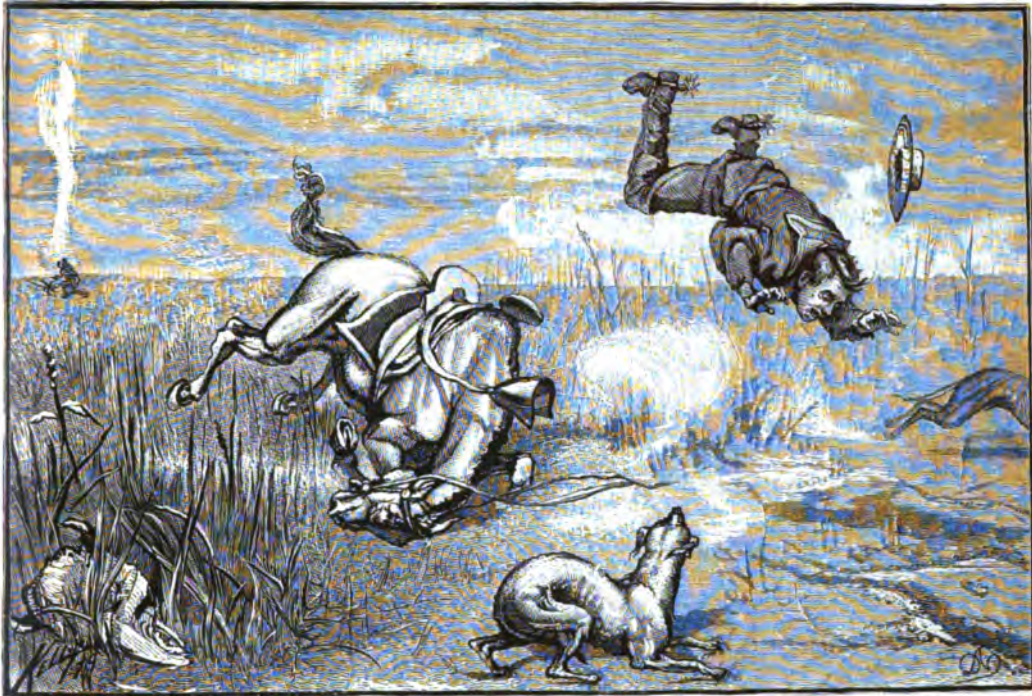
The winter after the grasshoppers came, my brother and I started a "bone-team." We were about cleaned out in the way of money; we had land and lean cattle, but nothing to eat. So we rigged up an old prairie-schooner (large wagon) and put our ponies to it and went into the business of drawing bones. Perhaps, too, I need to explain what a bone-team is. On those prairies where buffalo and deer and antelope have run so many years, there are vast quantities of old bones lying about. In many tracts the ground is fairly covered with them; and in the winter and spring, when the grass is off and the sun shining, the plain at a distance looks white as if covered with frost or ice. The turf is full of bones of all sorts and sizes; and scattered about are some enormous buffalo skulls, with the short, thick horns still in them.

These old bones are of some commercial value. At almost every station of the railroads across the plains there is an agency for the purchase of bones. They are taken East and manufactured into fertilizers, like superphosphate of lime. The price paid that year at the stations of E— County, was five dollars per ton. My brother and I drew in rather over a hundred tons during the winter. It is no great job to pick up a ton of those bones in many places, but we had to haul ours nearly twenty miles; for, the most of the land near the railway has now been taken up, or at least cleared of bones. It was a three-

days' trip to go out on the plains and get a load. With our team of six ponies, we commonly drew in three tons. While out on these bone trips, we made considerable account of jack-rabbits; we had two greyhounds on purpose to hunt them, and to hunt antelopes. I did most of the hunting; my brother was a little lame that season from a "hoist" he had received off a reaper. We had one of the fleetest ponies for running I have ever seen. In color she was so light as almost to look silvery, and had both her forelegs white. Her hair was very short and thin. She was slim and trig — oh, a delicate little creature! In weight she was not much above seven hundred pounds; but ah! she would skim those plains like a goshawk. We called her Gilly.

I would get up before sunrise, call in Sport and Grip (the two greyhounds), then mount Gilly, and start after a jack for breakfast. One morning we got after a pretty big jack, and ran him out past a large white-topped "schooner," where an emigrant party had hauled up for the night. Two men and a woman were stirring about it; and I saw two nice, rosy girls peering out of the back end of the wagon. They looked so inspiring that I thought I would show them a little fancy riding. So I touched Gilly and told her to go. At that, she just reached out those white legs of hers and straightened to it. Oh, she went like an arrow after the hounds and past that schooner, and away on across the prairie. And, right in the midst of her keenest run, she broke into a wolf-hole! Believe it or not, the mare turned a complete somersault! But I was n't in the saddle when she turned it: I had gone on, and went on; went on my head, went on my knees, went every way. I was more than fifty feet from the pony when I finally stopped! Sport and Grip pulled up to see me go, and the jack,— he stopped and looked. The wolf came out of the ground and looked, too. They were all so interested in it that they entirely forgot each other. And back at the schooner I saw six or seven men, women and girls, standing motionless, with their mouths open. When I, at length, got up, such a "ha! ha!" came wafted on the wind as I shall not soon forget. It hurt me outrageously. I got up, feeling as if I were a hundred and one years old. As for the jack,—well, he had taken leave; and the dogs were barking into the wolf-hole.

Another young fellow, named Adney Clark, and myself, once ran a jack-rabbit under a settler's house, which stood out by itself on the prairie. The rabbit ran up to it and crawled under the sill. The hounds could not get under. We went round the house and then into it. There was no one at home. We were determined to have that jack, anyhow. So we pulled up two or three boards of the floor, and Ad took the fire-poker and got down under the floor to poke out the jack. He had not been down there long when he uttered a screech and came out at one jump, with a great big rattlesnake hanging to his boot-leg! I grabbed a chair and killed the snake. Ad was so weak he could not stand alone and could scarcely speak. I pulled off his boot. But there was no



"But I was n't in the saddle. I went on."

mark on him. Fortunately, the snake had only bitten his boot-leg. We then poked out the jack and the hounds grabbed him.

And at another time, when eight or ten of us were out racing down jacks, with as many as thirteen hounds, we all got after one big fellow, and at length ran him into an old deserted "dig-out."

A "dig-out," or "root-out," is a house dug in the ground, and the floor of it is often four or five feet below the level of the soil. The door of this one was gone. The jack, being pretty hard run, darted in there. In went the whole pack of hounds after him, and there was no end of a pow-wow. Round and about they went, yelping and growling down there in the dark. We thought there would n't be much left of that jack, when, by and by, out he came and leaped away, leaving all the hounds in there tumbling over one another; and the end of the business was that we had to go in and haul those dogs out by the legs.



LANDING THE 'LONGE.

BY FREDERICK FORD.

A FEW summers ago, while I was one of a jolly camp of hunters among Canadian woods and waters, I had as my special guide and boatman a bright young thirteen-year-old Canadian lad named Pierre. He was as brave and as handy as any backwoods guide and trapper, and many a bass we landed and many a duck we bagged.

One morning, while the captain went to the village for letters, and Selby plunged into the woods to look for ruffed grouse or "partridge," Pierre and I made arrangements for fishing. We went to a little branch falling into the lake back of our island, and with a seine improvised of a bit of canvas, caught a number of minnows, which I kept alive in a tin pail until wanted for use. Then we paddled into the creek where we had seen bass the day before, and shoved the canoe into the reeds. I had a ten-foot rod with a reel and plenty of line; so, passing a hook through the upper and lower jaws of a minnow, I made a long cast into deep water, and let the little fish swim about at its own pleasure. I had almost despaired, when the line was suddenly tightened. Striking by a quick turn of the wrist, I felt my fish, and Pierre with a landing-net soon had him floundering in the canoe; it was a bass, and weighed about two pounds. We took two more and then they stopped biting. I put away my rod, and Pierre soon pulled me around at the other side of the island. There was a good breeze blowing, so I ran out my trolling-line,—a long, heavy cord to be held in the hand. Instead of a minnow, I attached a spoon bait,—silver on one side, copper on the other, and suspended above a group of three stout, wicked-looking hooks ornamented with a bit of red flannel tied about with tinsel. When trailed behind a moving boat, this spoon revolves or spins about the hooks, and is supposed to look like a small fish.

After paddling up and down the outside of a long bed of weeds, we took one small bass; then I had Pierre land me on the ledge of rock, from whence, with my rod, I could drop a minnow at the edge of the weeds, while he went back to trolling. Half an hour passed, and just as I was drawing in my minnow for a last cast, there came a vicious tug at the line, and my reel spun around to a merry tune, while the rod bent like a bow under the strain; the tension slackened a little, and I hastened to reel in the slack line as a big bass leaped from the water in the effort to free itself of the hook.

"Bring the landing-net," I shouted to Pierre, who was a short distance off in the channel.

He started to haul in his spoon so as not to get it caught in the weeds, and had drawn it within twenty feet of the canoe, when I saw him make a quick grab at the line, and the next instant the white body of an enormous muskallonge rose to view and disappeared with a plunge.

"I've got him," Pierre screamed.

"Keep the line tight on him; never mind the paddle," I shouted.

Pierre's hands held like a vice, and the canoe, towed by the huge fish, started toward the open lake; meantime, my bass was leaping and plunging, but I kept the line short and tight, and the top of the rod well up so as to allow it the spring

of the rod only for play, wishing to tire it as quickly as possible; and all the time I shouted encouragement to Pierre. My fish refused to be conquered without a stubborn fight; and time and again I had to give it line to prevent it from breaking away, so that it required my whole attention.

"Look out, sir; I'm coming," cried Pierre.

He was standing erect in the canoe, his arms outstretched, and the line tight as a bow-string, coming straight up the channel again, and looking like the man in



"I had Pierre land me on a ledge of rock."

the circus doing the great bareback tandem act. I had left the rocks and brought my fish up to a sloping gravel beach. Here, wading in a few feet, I succeeded in gripping it and tossing it out upon the shore,—a good six-pounder. While killing the bass I heard a tremendous splash by the 'longe, and, looking round, saw the canoe rocking idly upon the water, and Pierre nowhere visible.

"Pierre," I shouted, as I threw off my coat to plunge in. His black head came up beyond the canoe, and he cried:

"I'm all right, sir; I can feel bottom"; as he spoke he floundered into shallow water, where it was hardly waist-deep. Then he added, sorrowfully:

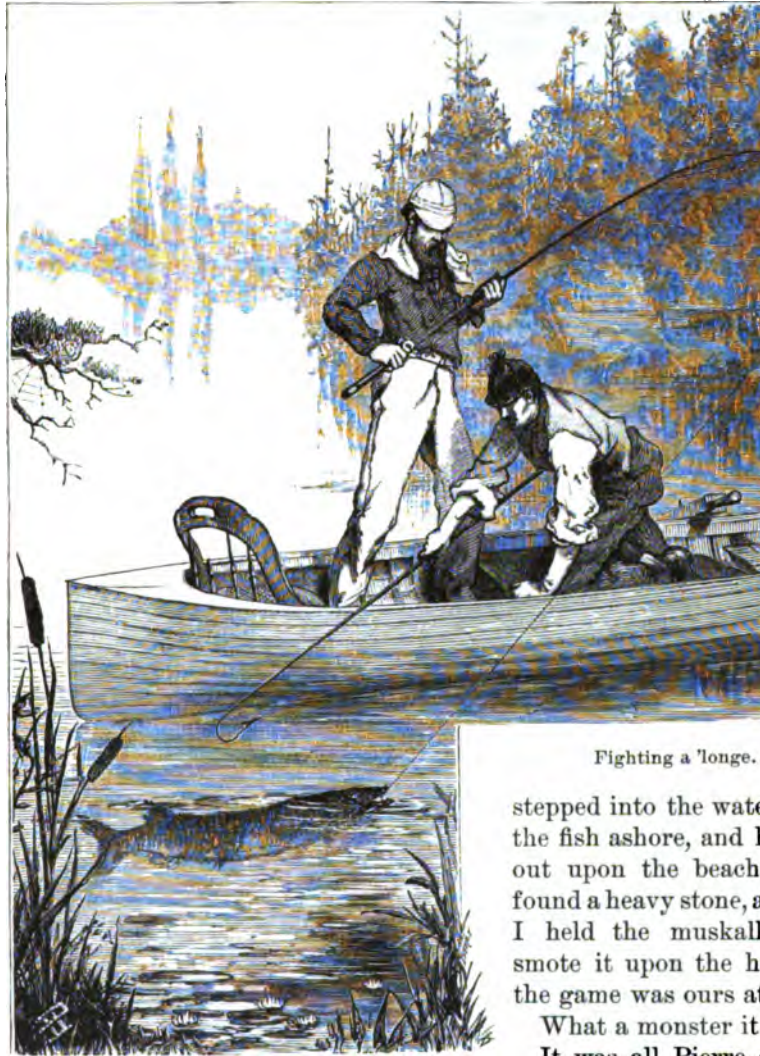
"I've lost the 'longe; I must have let go the line when he jerked me out."

I did not regret the loss of the fish, being thankful that the capsized did not occur in deep water. Pierre was upon a little reef, and the canoe was being blown slowly toward me by the wind, so that I would soon be able to take him out of his cold bath. Suddenly, the canoe veered round with a jerk, and started rapidly in Pierre's direction, and against the wind. Then I remembered having tied the end of the line to the canoe, and I knew at once the fish was still fast and liable to carry the canoe out into the lake again. The situation was sufficiently serious, and I called to Pierre: "Look out for the canoe; the 'longe is still towing it by the line fastened aboard. Can't you manage to catch it as it comes by?"

Luckily, the fish changed its course so as to bring the taut line within Pierre's reach, and, quicker than it takes to tell it, he had drawn the canoe toward him, thrown his body across it, and scrambled in. I gave him a cheer of triumph, and was answered by his ringing laugh. The 'longe, feeling the added weight of Pierre's body, again rose at the end of two hundred feet of line, and I could hear the jingle of the spoon as the great fish shook its head to free itself of the hook.

"Bravely done, Pierre; take the paddle now and work in toward shore; he can't possibly break away; he is too well hooked."

Then commenced a trial of strength between the paddle and the fish; but as the fish would yield a little and the boy would not, the canoe gradually approached the shore. As soon as it came within reach I sprang in, took the line, and commenced to haul in on it. Instead of drawing the fish in, I drew the canoe toward the fish until I had taken aboard more than two-thirds of the line and pulled clear of the bed of weeds, where I was afraid we might lose our prize. Then the 'longe rose slowly and lay like a log upon the surface, and it was plain to see that it was getting discouraged. It came up again quite near the canoe, and looked so huge that I was afraid to try to take it in over the side; the landing-net was too frail to be thought of; I told Pierre, therefore, to paddle toward the shore, being careful not to let the fish rush under the canoe so as to tear away the hook. We gradually got into shallow water, and as the 'longe came alongside once more, I seized it with the thumb and fingers of my right hand by the bony sockets of its eyes, and, holding on to the line with my left hand,



Fighting a 'longe.

stepped into the water, towed the fish ashore, and hauled it out upon the beach. Pierre found a heavy stone, and while I held the muskallonge he smote it upon the head, and the game was ours at last.

What a monster it was!

It was all Pierre could do

to lift it into the canoe, and my big bass looked very small alongside of it

We were soon at the scow, which constituted our floating camp, and had a roaring fire in the stove. While Pierre, wrapped in blankets, reclined near the fire and waited for the sun to dry his clothes, he said, with a shake of the head, and a proud glance at the big fish:

"I'll tell you what; for a long time I did n't know whether I had the 'longe or the 'longe had me, and when I popped into the water I thought I was a goner, sure."

When the others came in, each man lifted the huge fish and guessed at its weight; the lowest guess was forty pounds, and the highest, forty-five; so you may be sure it was no sardine. We had fried fish, baked fish, and a most delicious fish-chowder concocted by the captain. The next day was Friday, and John Franklin, our Indian guide and cook, scooped a hole in the gravel on shore, built a big fire, and when it had burnt down, he swept the coals and ashes out. Then wrapping a great section of the big fish in heavy brown paper, well wetted, he laid it in the hole, covered it with hot ashes, and heaped the coals upon it; then he added fresh fuel, to keep his oven hot, and in about two hours afterward uncovered it and invited us to the feast.

We went fishing several times afterward and took a number of 'longe, but none of them equaled the big one that carried off Pierre and the canoe, and whose enormous head with wide-spread jaws and wicked-looking teeth looks down from a corner of the library in the captain's Boston home.

Mr. Selby had brought in a few ducks that flew too temptingly near him, and four ruffed grouse; these delicious birds, roasted, were served by the captain with a dressing of bread-crumbs and rich-brown gravy as a side dish to Pierre's 'longe, and the recollection of that feast makes my mouth water to this day.



HOW SCIENCE WON THE GAME.

BY GEORGE B. M. HARVEY.

I.—THE CONFERENCE.



JACK HUNT, pitcher of the Stafford base-ball club, was in trouble. It was Monday. The final and deciding game between the Stafford and the Danville clubs had been called for the next Saturday; and "unless," as Jack said, something "turned up," his club would be sure to lose "the rubber." Each nine had won a game; and so they would meet for the final struggle on an apparently even footing. But really the chances greatly favored the Danville club, which had recently taken in some older players, who materially strengthened their nine. They were all lusty young fellows. Not one was under eighteen years of age, and several were out of their teens. But Sanborn, the Staf-

ford's first baseman and captain, was barely eighteen, and the ages of his men ranged from fifteen to seventeen.

Jack Hunt was a well-built lad of sixteen, which was also the age of Winfield Scott Hancock Bliss, the Stafford catcher.

And I must say a word, also, at the outset, about Win. He was a Boston boy, spending his summer on the farm belonging to Jack's father, who happened to be his uncle. He was of a rather short and thick-set figure, with big black eyes that glowed like coals of fire when he was excited. Win had made good use of the gymnasium at school in the city and was really quite an athlete. He could jump two feet farther and nearly three feet higher than any of his Stafford friends. Any other member of the nine could throw him in a wrestle, but not one of them could knock off his cap.

"You have the strength," he used to say to them, "but I tell you 'science' is the thing that wins!"

After supper, that Monday, Jack and Win started together for the village, where a conference of the nine was to be held on the piazza of the main store. The pitcher's face was still gloomy, for he knew from sad experience that the Danville fellows asked no better sport than to bat his pitching. The other players were less downcast, but all looked serious. The whole club was on hand in answer to the call. Besides the pitcher and catcher, there were Captain Sanborn, first baseman; Will Bailey, third baseman; Harley Esden, short-stop; Jack Steele, left-field; Am Ricker, center; and Sim Clarke, right.

The dignified captain called the meeting to order.

"I have asked for this meeting," he said, clearing his throat, "to see what was best to be done about the Danville game. We all know that we've only a small prospect of winning. We play just as good a game in the field as the Danville fellows, but we can't begin to equal them at the bat. I went to see them play the Barnets on Saturday, and I tell you they hit very hard. Besides, they have a new pitcher, and he throws like lightning."

"Then we might just as well give it up in advance," said Jack, whose small amount of courage had already slowly oozed away.

"No, sir, we're going to play 'em, anyhow," responded the resolute captain. "And we have just one chance of beating them; and that is to break up their batting."

"You'll have to put in a new pitcher, then," returned Jack.

"Nonsense. There is no use talking about that," said Captain Sanborn. "You're the best pitcher in the nine, Jack,—by all odds the best. I do wish, though——"

"Well, what?" said Jack, as the captain hesitated.

"I wish you could learn to curve 'em. Don't you suppose you could?"

"I know I can't," was Jack's despondent answer. "I've tried, and tried, but can not get the trick of it."

There was silence for a moment, and then began a long discussion, in which his fellow-players sought both to cheer Jack's drooping spirits and to devise some plan of action that should promise to bring them success in the great game to be played on Saturday.

"Well, boys," said the captain, finally, "let every man do the best he can—that's all. We must keep our courage up. We've beaten them once and we may beat them again. And if not, we'll make them earn the victory, at any rate."

So the sober conference was ended and the boys walked slowly to their homes. Late in the night Win heard Jack mutter in his sleep, "If I only *could* curve 'em!"

II.—THE CURVES.

"WAKE up, Jack! Wake up, quick!" screamed Win in the ear of the sleepy pitcher the next morning. "I have an idea—a great scheme! Come, come!"

"What's the row?" grunted Jack, rubbing his eyes.

"Did you see that tall fellow, in the checked suit, at the hotel last night?" asked Win.

Jack nodded sleepily.

"Well, sir, he is the base-ball editor of the Boston *Trumpet*. I'm sure of it. I knew I'd seen him before, and it just flashed upon me where. He is just the man we want. Hurry, or he'll have gone!"

"What if he has? he can't play for us," said Jack.

"I know that. But don't you understand. Are you asleep yet? He'll show you *how to curve*!"

"W-h-a-at!" Jack was wide awake now.

"Curves, curves,—don't you see? He knows all about 'em," said Win, eagerly. "Come on!"

It took Jack just ten minutes, by Win's watch, to dress, breakfast, and start on the run for the summer hotel.

When they sent up their names, they received in answer the message that "the gentleman was not up yet, but would they not wait?"

"Wait! well, I should say so!" replied Jack, with unnecessary energy.

An hour later, a tall, pleasant-looking young man sauntered into the office from the breakfast-room. It was the base-ball editor of the *Trumpet*, just arrived to spend a short vacation among the Green Mountains.

Win was nervous, as he advanced to meet them.

"Is this—the—*Trumpet*?" he finally burst out.

"What did you say?" inquired the young man.

"I mean," corrected the stammering catcher, "is this the base-ball editor of the *Trumpet*?"

The young man finished lighting a cigar, blew a whiff of smoke, and acknowledged his identity with a nod.

"Well, sir, we want the 'curves,' please," said eager Win.

"The *what*?" asked the young man wonderingly, while Jack sidled toward the door.

"It seems to me I never was so stupid!" replied Win, hastily. "Why, we came to ask if you would n't show our pitcher how to curve 'em. We're to play a match game next Saturday, and we've got to do something desperate or we'll get beaten out of our boots. Can't you show him how to curve?"

The now enlightened base-ball editor smiled, blew another whiff of smoke, winked, and asked, "Where is he?"

"Who?" inquired Win.

"Your pitcher, of course. You don't want the right-fielder to curve, do you?"

"Of course not," said Win, laughing. "Here 's our pitcher. Jack, this is the base-ball editor of the *Trumpet*."

Jack bowed and the base-ball editor held out his hand and looked carefully at Jack's.

"Are you strong in the wrist?" he finally asked.

"Yes, sir, I think so," said Jack.

"Let me feel your arm."

Jack extended it toward him, saying: "I ought to have *some muscle*; I've worked on the farm all summer."

"You did n't get that bunch there, in working on the farm," observed the base-ball editor, pressing the muscle on the outside of Jack's fore-arm, near the elbow.

"No, sir, I did n't," said Jack, in a surprised tone.

"You got that by pitching," continued the young man. "You must have pitched a good while, for a youngster."

"Yes, sir," responded Jack, in unfeigned astonishment.

"Well, my young friends," said the base-ball editor, after smoking for a minute in silence, "I take you to be in earnest, and I'll tell you what I'll do. Out behind the hotel is an empty piano box. I saw it from my window, this morning. Go and prop that up on its sides, measure off fifty feet from it and mark the spot. Then, at about half-way between the box and the marked spot, drive a stake five or six feet high into the ground. By the time you shall have done that, I'll have finished my cigar, and will come out and see if we can meet the emergency."

Fifteen minutes later, the two eager boys, having carried out the young man's directions, saw the tall form of their new friend emerge from the back door-way of the hotel.

"Now, that piano box," remarked the base-ball editor, taking a league ball from his pocket, "we'll say, is resting on the home base. This spot, fifty feet away, is the pitcher's place. I will stand here facing the box and hold out my arm (with the ball in my hand) at right angles with a line running straight from here to the box. Now, one of you stand here behind me and take a squint over the ball, with the stake as a 'sight,' and let the other mark the place on the box, which the 'squinter' says is in a straight line from the ball, as I am holding it."

Win "squinted," and Jack made a straight mark, toward the ground, on the piano box. Both boys were decidedly mystified.

"Now," asked the base-ball editor, "a ball going straight from my hand and just missing the stake will hit the chalk-mark on the box; will it?"

"Yes, sir," replied Win, promptly.



The boys are instructed in the art of "curving."

"Then, if it strikes to the left of the mark, it will have to curve; will it?" was the next question.

"Yes, sir," answered Win, again.

"Then, here goes!" said the base-ball editor; and taking the ball in his right hand, he pressed it an instant with his left, and then threw it sharply. The ball passed about six inches to the right of the stake, and yet struck the box two or three inches to the left of the chalk mark.

"It must have curved eight inches," observed Win with "scientific" accuracy.

Jack tossed the ball, and the young man threw again. This time the ball just missed the stake on the right, and struck at least a foot to the left of the mark.

"That was better," remarked the base-ball editor, in a satisfied tone. "Now, come here, Mr. Young Pitcher, and I'll show you how to do it."

"I don't believe I ever can," responded Jack, but with a face as eager as a child's.

"Oh, yes, you can!" said the young man. "There's nothing like knowing how. First, take the ball between your thumb and forefinger. Don't let your

other fingers touch it. There, that's right! Now, press it down so it will just touch the cord connecting your thumb and finger. Correct! Now, pinch it *tight* with the end of your thumb and throw from your hip."

The ball struck to the right of the mark.

"No curve to that," said the instructor. "Pinch tighter and give a sharp, quick jerk when you throw."

The ball struck the mark.

"That's better," was the encouraging comment. "Try again, and don't hurry about it! Keep cool!"

Jack had now almost overcome his nervousness and did as he was told. The ball just missed the stake and struck the box six inches to the left of the mark.

"Hurrah! You've caught the trick!" cried Win, throwing up his cap.

Jack tried again and again, finally making the ball strike nearly as far from the chalk-line as his teacher had sent it.

"Very good, indeed, for a beginner!" said the base-ball editor, heartily. "That is called the 'out' curve. Now we'll try the 'in' curve. You'll find it harder to manage. Bend your thumb at the first joint, place the ball on your knuckle and hold it firmly with your first two fingers. Don't let your other fingers touch it. Throw from near your knee, at first, and on the left side of the stake."

Jack threw swiftly, and the ball struck the mark.

"Now, again, and pinch tight," was the command.

Again Jack threw, and this time he made the ball strike two or three inches to the right of the mark.

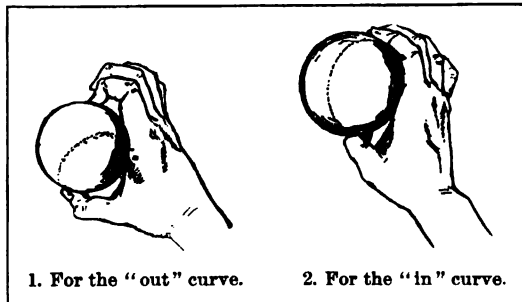
"That is much better than I expected," said the base-ball editor. "Why, you're a natural pitcher! Now all you want is practice. Use the stake awhile and

then pitch over a base. Practice as much as you can without laming your arm. There are other curves, the 'up,' and the 'down,' besides what is called the 'shoot,' but these two will be enough for you to learn between now and Saturday."

"I'm everlastingly obliged," said Jack, warmly.

"You need n't thank me," responded the base-ball editor,

smiling at Jack's enthusiastic expression of gratitude. "But I shall be interested in your work on Saturday. Will you let me know the result of the game when you come back from the match?"

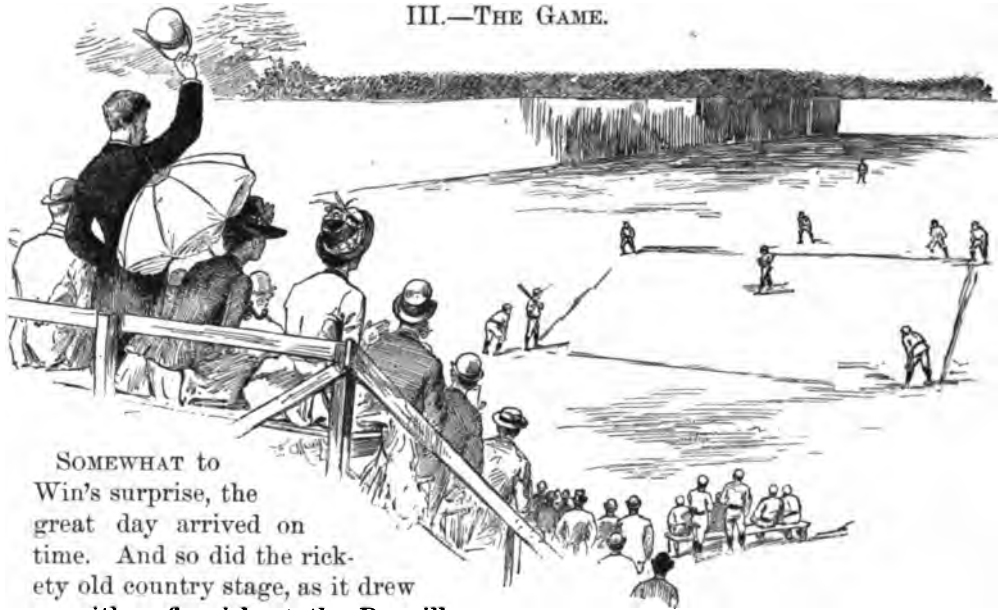


Diagrams showing how to hold the ball for "curving."

"Yes, indeed!" answered Jack, heartily, and the two boys bade a grateful adieu to the young man, and went gayly off to the base-ball grounds for further practice.

"I tell you, Jack," said Win, as they walked rapidly along, "science is the thing that wins."

III.—THE GAME.



SOMEWHAT to Win's surprise, the great day arrived on time. And so did the rickety old country stage, as it drew up with a flourish at the Danville ball ground, and was greeted with a cheer. Out clambered the Stafford nine. They looked very neat in their bright new uniforms; but the spectators could not help remarking the physical superiority of the Danville players.

"We're going to have a perfect 'walk-over,'" remarked one of the Danville nine, lazily twirling a bat, as the Stafford boys threw off their coats.

Jack's quick ears caught the remarks, and his blue eyes flashed with indignation. "We'll see about that!" he muttered.

Jack had followed his instructions faithfully, and he felt confident of his ability to puzzle his opponents. Win, however, was less certain, and he whispered to Jack:

"Don't lose your head."

The base-ball editor's parting injunction, that morning, had been:

"Keep cool and pinch tight."

Captain Sanborn of the Staffords won the toss and chose the field. The boys scattered quickly to their various positions, and the ball was thrown to the pitcher. But no sooner had Jack received the signal to play than he had an

attack of "stage-fright." His nerves tingled, and his knees shook. It was really not to be wondered at, for he had never pitched before so large a crowd, and he could not help feeling that the game depended on him. It was a trying position for any lad, and especially so for Jack, who, as Win said, was apt to "lose his head."

"Low ball!" called the umpire.

Jack threw quickly, and the ball whizzed away over the striker's head, striking the catcher's fence. A titter ran through the opposing nine. This bit of discourtesy was too much for Jack in his nervous condition. He threw wildly and became first excited and then reckless. Two men went to first base on called balls, and five made safe hits. When the wretched inning was finally ended, the Danvilles had scored five runs. Jack did not try to conceal his mortification.

Abe Blanchard was the first Stafford batsman. He was considered a good hitter, but he retired on three strikes, saying that the pitching was too swift for him.

Steele sent an easy fly to the second baseman, was caught out, and Win stepped to the plate. He was not embarrassed or nervous, and he hit a sharp grounder between the short-stop and the third baseman. The left-fielder was over-confident and let it pass him, and Win made two bases.

"Hunt to bat!" called the scorer.

Jack's face still burned, but his teeth were clenched. He struck the first ball pitched with all his strength and sent a fly just over the center-fielder. Win got in and saved a whitewash. The next striker was put out, but the cheering of the crowd brought Jack to his senses. He walked steadily to the pitcher's box, perfectly cool and collected.

"Play!" called the umpire.

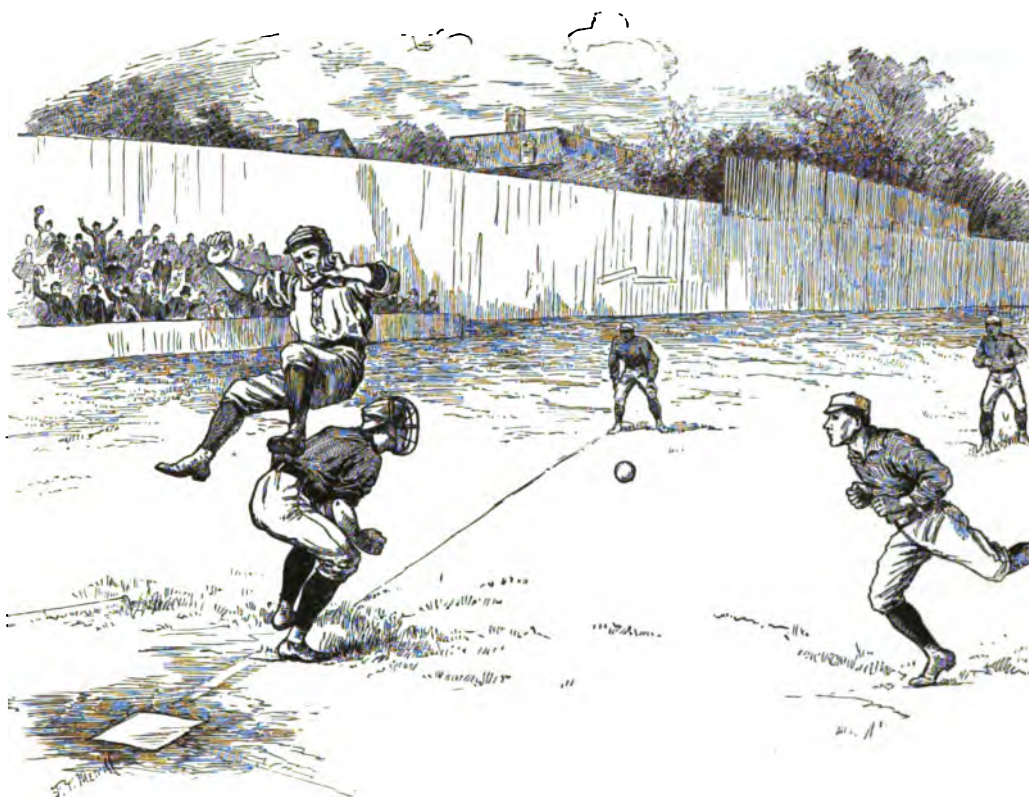
Jack pressed the ball into his right hand, pinched it tight, took a deliberate step forward and threw it. The batsman struck at it, but the ball passed at least six inches from the end of his bat. Win smiled. Another ball followed, with the same result. Jack's confidence had now returned, and Win's black eyes flashed re-assuringly behind the catcher's mask. The next ball started directly toward the striker, who stepped quickly back to avoid being hit. But his act was unnecessary. The ball curved neatly over the base and lodged safely in Win's hands.

"Three strikes, and out!" cried the pleased umpire.

The batsman was puzzled. He looked at the umpire, at his bat, and finally at Jack. But Win understood. It was the "out" curve.

"Science is the thing that wins," the catcher whispered softly to himself.

Two more strikers were retired in quick order, one having struck a foul ball, which was easily caught by Win. It was a whitewash for the Danvilles. Not a man had reached the first base or had even left the home base. What



"Win made one of his famous jumps and went over the catcher's back."

could it mean? The Danville players looked at each other wonderingly, and the audience smiled and concluded that it might be an interesting game, after all.

From that time on, the Staffords steadily won. The swift pitching was hard to hit, but they had regained their courage and they did very well. The Danvilles soon saw how the balls were curving from them and they batted more prudently. Then Jack tried the "in" curve. But they would hit even his curves occasionally, and in trying to vary his delivery, he let two or three strikers take bases on called balls. The game became interesting. At the end of the eighth inning the score stood twelve to eleven in favor of the Danvilles. They went to the bat for the last time, and Jack was on his mettle. The strikers retired in one,—two,—three order.

The Staffords came in to close the inning. But the history of that half-inning was best told by Jack to his friend, the base-ball editor, late that night.

"Well," began Jack, when he reached this point in his narrative, "Am Ricker went up first for us, and he was so flustered, he struck out. Abe Blanchard hit

a good grounder to third, but the ball got to first before he did. Then Steele went in and was given his base on called balls. And there we were! If they whitewashed us, we were beaten, but if we could get in one run, we should tie 'em; and two runs would give us the game. Win was next, and he never fails. He made a 'daisy' hit. It was a liner just over the short-stop's head, and the left-fielder fumbled again, so Win got his second. Then it was my turn. Well, sir, it was so still when I stepped to the plate that I honestly believe you could have heard a pin drop on the grass. But I was just as cool as a cucumber. I'd mastered all my nonsensical nervousness.

"Well, I waited till I got a ball that just suited me, and then I sent it right down by the first base. The baseman did n't capture it, though; and Steele came in from third and Win started from second. I never once thought of his trying to get home, for the right-fielder had the ball in quick time, though I was safe on first. But, sir, Win never stopped at third; and, jiminy!—how he did run! The catcher saw him coming and yelled for the ball. He was 'a short fellow, that catcher, but he was so afraid that Win would slide under him that he stood right in the line about three feet from the home base. The right-fielder had thrown the ball to the second baseman, and he threw it home when he heard the catcher call for it. The ball came right to the catcher's knees; he stooped and caught it, and reached around instantly to touch Win. But he did n't touch him. For, just as he stooped, Win made one of his famous jumps, and went clear over the catcher's back, striking both feet on the home base!

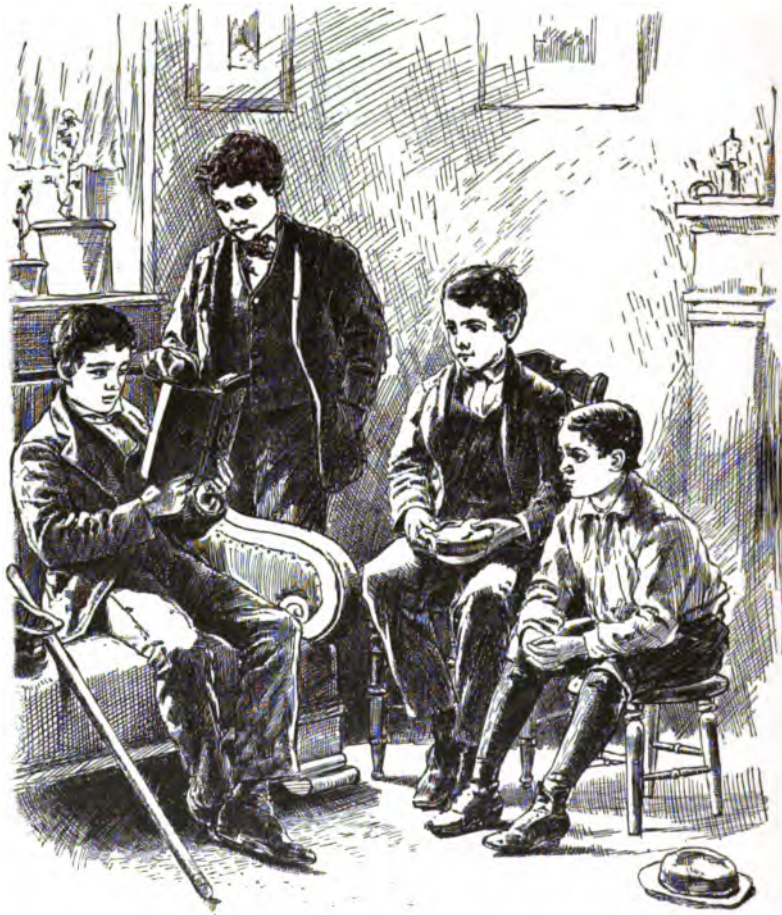
"Well, sir, you should have seen that catcher's face when he turned round and saw Win behind him. I just lay down on the grass, and kicked my feet in the air and screamed! And the crowd, did n't they cheer! I never heard such a noise on the Fourth of July, or at any other time, and I never saw Win's eyes so big and bright. But all he'd say was what he always says: 'I tell you, boys, science is the thing that wins!' Oh! you ought to have been there!"

"I wish I had been there, I'm sure," said the base-ball editor, regretfully. "But I'll tell you what I am going to do,—I'm going to write out a report of that game."

And he did. This is it.

THE END.

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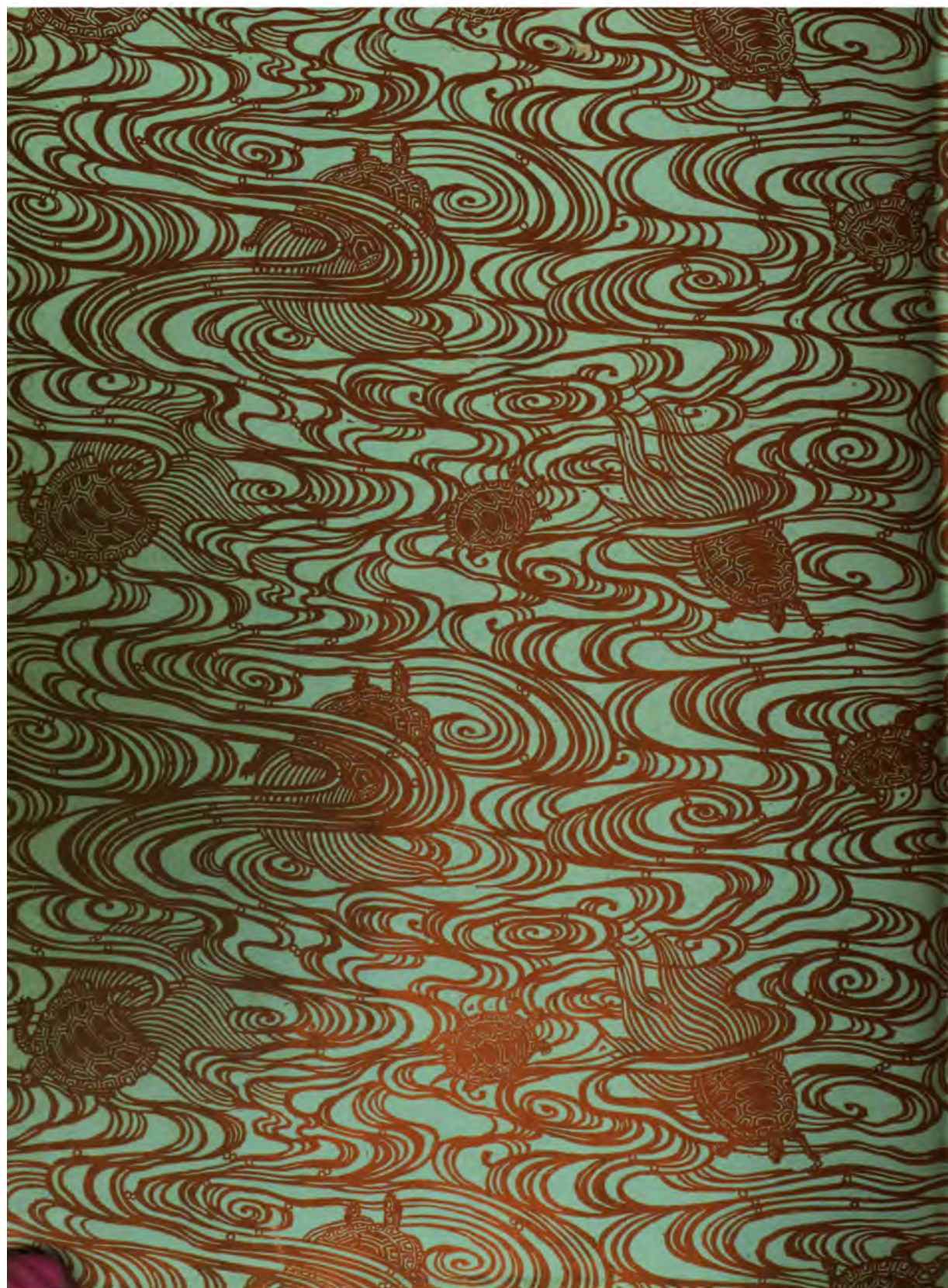
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